# A GRASSROOTS PRAXIS OF TECHNOLOGY: VIEW FROM THE SOUTH

A Dissertation
Presented to
The Academic Faculty

By

Sucheta Ghoshal

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy in the
School of Interactive Computing

Georgia Institute of Technology

December 2020

**A GRASSROOTS PRAXIS OF TECHNOLOGY: VIEW FROM THE SOUTH**

Approved by:

Dr. Amy S. Bruckman, Advisor
School of Interactive Computing
*Georgia Institute of Technology*

Dr. Carl DiSalvo
School of Interactive Computing
*Georgia Institute of Technology*

Dr. W. Keith Edwards
School of Interactive Computing
*Georgia Institute of Technology*

Dr. André Brock
School of Literature, Media, and Communication
*Georgia Institute of Technology*

Dr. Lilly Irani
School Communication and Science Studies
*University of California, San Diego*

Date Approved: September 23, 2020

How do you deal with things you believe, live them not as theory, not even as emotion, but right on the line of action and effect and change?

*Audre Lorde, 1981 [1]*

In our meetings, we keep going back to this belief: we cannot do this alone, and we don't want to. To me, grassroots approach is both at once a practicality and a desire. We can't do it alone, that's just the truth, it's a practicality. But 'we don't want to' speaks to this desire, that we want to be part of something broader; we want to be part of something large, and something connected and something inclusive; something that speaks to many people even if it doesn't speak to me individually.

*Southern Movement Assembly Member, 2016*

## ACKNOWLEDGEMENTS

I certainly did not think that I would be able to accomplish life all by myself—I knew I would need *my people*. That said, I also never imagined I would need and find the love and solidarity of the many, many people who ended up contributing to my personal and political ways of being, and therefore, to the conception of this dissertation along the way.

First and foremost, graduate school is hard, and I would not have survived without professional help, no joke. And so, at the risk of bending norms a little, I want to begin by thanking my therapist as well as the entire (physical and psychological) care network I was able to set up who helped me process this journey in their professional capacity. Sometimes you need more than a friend to get you through life, and I hope that extra support is normalized, accessible, and affordable for all.

I am so grateful to have found the most incredible academic mentors in this journey. Thankful to Dr. Lilly Irani, for being a constant source of hope, validation, as well as intellectual growth. Thanks to Dr. André Brock for being my favorite teacher ever—you will forever be the person who made me believe how truly transformative a formal classroom experience can be. Thank you to Dr. Carl Disalvo and Dr. Keith Edwards for being the kindest and most supportive committee members for this dissertation work. Thanks to my advisor Dr. Amy Bruckman for giving me a chance, for letting me choose my own path, and for allowing me to run with this opportunity to all the ambitious places I ended up running to.

Thanks to a group of amazing collaborators who actively contributed to this work: Huda Tahua, Beatriz Abad Palacios, Vishal Sharma, and my co-author on several projects, Rishma Mendhekar.

My academic accomplices—how could this have ever happened without you? Os Keyes, thanks to your decade long friendship and allyship, I got to witness some magic in this life. Thanks to Jude Mwenda for being a sounding board and a confidant through many rough semesters. Many thanks to Ari Schlesinger for sharing survival tips with me at various moments of this jour-

ney. Thankful to the wonder that is J. Khadijah Abdurahman. Thanks to my amazing group of lab-mates Michaelanne Dye, Shagun Jhaver, Julia Deeb-Swihart, Scott Appling, Chaoyuan Luo.

Many thanks to Benjamin Sugar for, so much, but most importantly, for being a friend of my mind through what was a rollercoaster of a season.

I am deeply indebted to some life long friendships and relationships that cared for me unconditionally, not just through these PhD years but even beyond academic accomplishments and milestones. They are the ones who have been there through all of the mundane moments of joy, discovery, loss, despair, and whatever else this has been about.Thank you Malobi, for being that person, through life transitions and curve-balls, being your friend taught me to be a better person every day. Thank you Rini for pushing me to apply to a PhD program, for reading embarrassing drafts of statements of purpose, and at times, knowing my purpose better than I did. Thanks to Sayan for all the poetry and music we shared—I sincerely believe that with all of our whimsical encounters we managed to create a forever refuge for ourselves and others, and that's no small feat.

Thank you, Debarati, Tamoghna, and others for helping make one of the first political homes that will continue to shape my politics. And on that note, special thanks to Joyraj for all the ways you accompanied me in practicing my politics for a little while.

Thank you, Priya Iyer, for walking into the unknown with me in 2015, for building a community/home with me in Rakkar, Himachal Pradesh, and for continuing to be the one person I would happily venture into any and every unknowns with. Thanks to many others in the Rakkar community who helped me experience the magic of active learning first hand.

Thank you, Megan Leach, for being my "book dealer/healer," for all the proofreading, and ultimately for helping me make Atlanta my own.

My family, my main ones, how could anything be ever possible without you? Duri, thank you for being my lifeline, that's it, it's been that simple yet that significant. Also, thank you for sharing your mother with me; Perri, thank you for taking care of my heart through it all, as mothers often do.

Thanks to my mother-in-law Subha Chakraborty Dasgupta for being a constant source of knowledge, wisdom, and inspiration, for this work and life.

Thankful for my parents—my father, for imparting the questioning bug in me, for emphatically teaching me to never take individual access or privilege as the systemic reality. Thankful to my mother for teaching me how to translate reflection into action, and for inspiring me with how she continues to do so with her own life.

Thankful for my extended family, which is big and so full of love, and therefore impossible to finish naming; but most importantly for my late grandfather Comrade Basudeb Ghoshal who I had the privilege of living a life with. My work, and all I do, will forever be an ode to my ancestors, especially to my forever comrade, my grandfather.

Now, Sayamindu—my partner in life, liberation, and everything—how to acknowledge you who is present on every page of this dissertation, of this entire journey? Thank you for existing, for growing with me, and for showing me that love—much like liberation—can be practiced, at once, as relentlessly as a radical discipline, and as effortlessly as breathing.

Finally, my movement family in the South—Aljosie Harding, Cita Cook, Rita Valenti, Steph Guilloud, Suzanne Pharr, Benjamin Kareem, Annie Raphael, Gulled Abdilahi, Angela Oliver, Wendy Shenefelt, La'Die Mansfield, Emery Wright, Nathan King, Colette Pichon Battle, Kim Pevia, Nikki Brown, Priyanka Bhatt, Nana Korantemah Prince Williams, and so, so many others—this has been a revolution of our own. This one is for you. And, yes, as I have chanted along with all of you so many times in meetings and on the streets, "I believe. I believe that we will win."

## TABLE OF CONTENTS

## LIST OF TABLES

## LIST OF FIGURES

## SUMMARY

Grassroots social movements led by Black, Indigenous, People of Color (BIPOC) in the southeastern United States have survived and fought through centuries of systemic oppression. In the recent age of Information Communication Technologies (ICTs), these movements often turn to popular, centralized technology systems like Facebook or Google Drive for support in accomplishing day-to-day tasks of organizing. Toward organizing their actions, grassroots social movements follow *praxis*—a combination of theory and practice. At the core of this grassroots praxis is the belief that our social movements must be centered around the people at the margins of a society. Popular centralized ICTs used in these movements, however, are often not made with grassroots praxis in mind. Though grassroots communities may be aware of this conflict, they have few alternatives to choose from. In fact, more value-aligned technical solutions are often more expensive and less inclusive. This poses interesting questions for the field of Computer-Supported Cooperative Work (CSCW)—how can we make sure community organizations are critically informed of the ways ICT values can affect their culture? How can we support them as they practice ICTs in ways that center their own values? What does it mean for us to design in solidarity with communities marginalized by hegemonic cultures of technology?

In this dissertation, I aim to contribute to these broader questions with findings and analyses from four years of community-centered, participatory action research I have conducted with grassroots social movements of the US South. Specifically, my research has been in collaboration with two grassroots social movement communities of the U.S. South: i) Science for the People-Atlanta, a local grassroots organization that I also helped build, and ii) Southern Movement Assembly, a regional grassroots movement consisting of 110 local organizations located over the U.S. South. I conducted two interview studies, three participatory workshops, and four years of ethnographic work while simultaneously supporting the movements by volunteering my labor as a community organizer. I also designed tools—both physical and digital—with and for these communities. Specifically, I designed a web platform with SftP-Atlanta and a handbook of move-

ment communication with the SMA. Finally, I analyzed this grassroots experience of ICTs in the light of notable theories of social transformation and technology-use—namely, *liberatory pedagogy* of social action, *technocultural theory*, and the body of work in CSCW and Social/Critical Informatics theorizing *technology as enactment of structures*. The tools I created as well as the overall process of my research were evaluated through ongoing reflections within the communities.

In this thesis, I show that the consequences of value-conflicts between grassroots organizations and popular ICT culture have significant implications of exclusion and marginalization within these communities—e.g. favoring community members who have the privilege of technology access and ability, which is further related to the racial, gendered, classed privileges held by these people. For grassroots organizations situated in the U.S. South, this perpetuates hegemonic patterns of the past—especially since they end up excluding the same subjugated groups of people who have been historically excluded by systems of power these movements aim to resist.

Through my analysis of their lived experiences of existing ICTs, as well as through material explorations of designing new technologies with and for these communities, I offer a critical perspective on technology-use by grassroots social movements. I argue that while popular ICTs largely came as a blessing to these movement communities that are often overburdened with the work of social transformation, relying on popular ICTs also came with a cultural cost. These tools and their surrounding culture of technology play a steady role in excluding the marginalized people in these communities by making invisible the power differentials underneath technical solutions—systemic issues such as lack of technological access/ability get foreshadowed by accounts of progress, efficiency, connectivity, etc. Thus, even in communities that actively question power, relying on ICTs can lead them to default to the values these technical solutions were often produced with. I further show that with adequate grounding and critical infrastructuring we can begin to imagine means of ICT-use that center grassroots praxis—an outcome that I present through my work in the field. Finally, I envision a future of *critical technology practice* where technology systems are designed, used, and held accountable with the liberatory values of grassroots praxis.

# CHAPTER 1
# INTRODUCTION

## 1.1 What to a Southern Grassroots Movement is Technology?

> *"With this collective breath we honor all of the people in struggle we have met, and all the people we have not met yet but we will since we have decided to stay in the struggle together. Oh, and a reminder to turn on your Zoom mic and camera as you take these deep breaths if you are able, it helps to know we are in this together." — Mama Nia, SMA Meeting, August 2018*

Nia Wilson, or as I had come to know her in the community, Mama Nia, was gently guiding meeting attendees through a virtual experience of cultural grounding. Over fifty participants in this video conference taking place on the proprietary videotelephony platform Zoom[1]—some on desktop computers, some on smartphones, many joined via phone call so you could only see ten impersonal digits on screen—you would not have to try hard to hear life happening in the background with road traffic, technical malfunctions, or domestic chatter. Plenty of everyday chaos all around, yet, if you were a member of the regional grassroots movement Southern Movement Assembly (SMA), this moment would mean everything to you. For this would be your chance to feel connected to your fellow *freedom fighters* across geopolitical boundaries and borders—from Congo to North Carolina—it would be your chance to renew your commitment to the *South*.

Information Communication Technologies (ICTs) like Zoom play a pivotal role in grassroots movement organizing of the present day. The meeting described above is one of many opportunities they shape for movements across the globe to create collective identities [2]—movement communities of the U.S. South and the Global South are no exception [3, 4, 5]. The case of ICTs in a movement led by Black, Indigenous, People of Color (BIPOC) of the U.S. South, however,

[1] `https://zoom.us/`

carries unique lessons for what technology has been to communities marginalized by race, class, gender, disability, and other systemic issues. As a scholar in the space of Computer-Supported Cooperative Work (CSCW) and the broader human-computer interaction (HCI) field, I envision a world where ICTs governing our lives are held accountable for the values they embody and promote—not just by technologists but by all people. I am committed to the agenda of *fostering a culture of public accountability of technology through community-centered research*. Toward this broader vision, for this dissertation, I have worked in partnership with grassroots social movements mobilizing marginalized people toward resisting systemic injustice in the context of southeastern United States. Particularly, my work so far has focused on understanding how movement communities—primarily consisting of historically marginalized people often with limited technological access and/or ability—relate to ICTs used in their everyday work. Toward which, I have worked as an action researcher—both participating in the movements and studying/ designing ICTs with them—with a commitment toward Southern grassroots traditions. With my work in the U.S. South, I have helped build a local grassroots social movement (Science for the People, Atlanta) and ii) helped sustain a regional grassroots movement in the U.S. South (Southern Movement Assembly).

Broadly, two research questions have guided me in the work of this dissertation.

> First, *what is the role of social computing technologies in grassroots movement building?* And, secondly, *what does it mean to design for the culture of grassroots movement organizing?*

Both of these research questions were generated in collaboration with the movement communities I studied. In doing so, we established a common goal to understand the ways in which ICTs have impacted the goals and identity of grassroots organizing in the U.S. South. I felt a particular calling to study this relationship, as, in my past life as a community organizer in the Global South, I frequently encountered the conflicted feelings movements share with their ICTs. They value the technical efficacy ICTs bring to the movement which leads these movement organiza-

tions to depend on ICT tools more and more, while simultaneously finding it odd to be enabling Big Tech, the major corporate phenomena that many of their actions and beliefs go against.

In this dissertation, I posit that *this conflict is not merely an indication of ideological discomfort, it is also one with implications of exclusion and marginalization within social movement communities.* While this may be a broader pattern in organizational settings whose values do not match with their own tools, for grassroots organizations situated in the U.S. South (and Global South), this relationship carries systemic, hegemonic patterns. In this thesis, I uncover the lived experiences of these systemic patterns and further work toward resolving some of them with the concepts I formulate and the tools I create via participatory, community-centered research methods practiced with a local and a regional movement community located in the U.S. South.

For instance, in one of my studies with the SMA (Chapter 4), I noted that the only note-taker in the large movement coalition (of 110 organization, almost 500 members) of predominantly Black and Brown people was a White woman of age 75. From the peripheries of the movement, this seems problematic to the movement values since a White person becomes the only narrator and active interpreter of the stories of Black and Brown people (while also creating quite a lot of labor for one person). But as I became closer to the central leadership, it appeared that this was a choice born out of multiple dependencies. The note-taker happens to be an expert in the history of the U.S. South which plays a role, but more importantly, she learned to type when she was sixteen years old, and now considers herself to be proficient with both typing on a computer as well as with the software commonly used for taking and sharing notes such as Google Documents/Drive, Dropbox, Microsoft Word. She embodies the value of efficiency in that she perfected the skill and labor of note-taking in the fastest and most accurate way with the help of a technology that many community members are intimidated by and/or many do not have physical access to. For a movement overburdened with resistance work it is understandable to rely on efficiency. Issues of access/ability further manifest into more complex problems. For example, as a result of these issues, most of the announcements, updates, and outreach from the organizers do not reach a significant part of the movement who lack technological access/ability

due to a variety of reasons—leading to an exclusion of the very people who were supposed to be at the center of the movement. This is a frequent occurrence in modern-day grassroots organizing: movement communities that are philosophically and politically committed to resisting systemic oppressions—racism, sexism, class, and caste-based oppressions—inadvertently end up perpetuating similar exclusions. In my research, I position myself in this difficult reality of grassroots organizing.

I argue that modern technology plays a role in this dynamic by making invisible the power differentials underneath technical solutions—systemic issues such as lack of technological access/ability get foreshadowed by accounts of progress, efficiency, connectivity, etc. Thus, even in communities that actively question power, relying on the ICTs often carries the risk of defaulting to the capitalistic values these technical solutions were often produced with. In this dissertation, toward establishing this argument I analyze my findings in the light of several theoretical works. While I use the theory of social transformation formulated by Brazilian educator and philosopher Paulo Freire (§2.3.1) to understand the social process of building up a movement, I map the findings (Chapter 3) from my work with SftP-Atlanta to explain the complex role social computing technologies play in that process. Further, I make sense of technology-use by the large regional movement of SMA (Chapter 4) with the help of technocultural theory articulated by Arnold Pacey (§2.3.2). Finally, grounding myself in CSCW and Social Informatics literature on practice theory (§2.3.2), I share my work of collaboratively envisioning and building a grassroots praxis of technology (Chapter 5).

For readers of this dissertation, it is important to first understand the sociopolitical, historical, and ontological *context* within which my research inquiry took place. Particularly, what *the South* and *grassroots*—the two key phrases that feature heavily in the rest of this dissertation—has meant to my research.

In this dissertation, I use "the South" in the transnational sense as it is being recently theorized and discussed in the academic fields of political philosophy, economics, cultural geography, and most importantly, in Southern studies [6, 7, 8, 9, 10, 11]. In geopolitical terms, the South holds

immense significance in the history of slavery [12, 13, 14], Western European colonialism [6], and continues to mean the changing landscapes of neoliberal globalization [15, 16]. There exists a rich history of the Southern identity that is rooted in its critique of global capitalism through a focus on racial violence, and particularly, anti-blackness. When I speak of the South or the cultural meaning of being a Southerner in this thesis, mostly, I refer to the shared experiences and tacit knowledges of capitalist oppression that people from all three continents of Americas, Asia, and Africa are exposed to. In the movements that I studied, allyship among the U.S. South, South America, Africa, and India was a clear goal. In fact, this dissertation is a product of the many relationships I was able to form with the BIPOC situated in the U.S. South—my Global South identity being an important part of that relational connection. While the term "Global South" is frequently used to mean "poorer [16]" nations situated in the Southern hemisphere (often as a post-Cold War alternative to the term "Third World"), it is getting reclaimed across various academic fields toward a broader understanding of the South. South in this sense becomes transnational, addressing "spaces and people negatively impacted by capitalist globalization." This new framing of the South, as Anne Garland Mahler writes "captures a deterritorialized geography of capitalism's externalities and means to account for subjugated peoples within the borders of wealthier countries, such that there are Souths in the geographic North and Norths in the geographic South [6]." Throughout this dissertation, I will focus on the role ICTs play in both sides of this struggle—legitimizing global capitalism as well as helping strengthen a transnational Southern movement against capitalist exploitation.

Despite carrying many promises of democracy and welfare especially in the Western world and beyond, the twentieth century ended with the rise of hegemonic globalization—a phenomenon extensively theorized by Portuguese economist Boaventura de Sousa Santos [7]. Santos also noted that the same hegemonic globalization also necessitated the "construction of a new pattern of local, national, and transnational relations[...]embedded in new forms of sociability and subjectivities" [7]. These efforts that Santos saw as having "the seeds of new emancipatory energies," were a formative step toward an epistemological shift in organizing strategies of local and global social

movements. While social movements of the past have often relied on the theories and philosophies of the Eurocentric political left originating from the Global North [9], this new shift in movement organizing intentionally centered the knowledges and experiences of oppression in the Global South [6]. A key example of this shift is the World Social Forum (WSF) [17]—an annual meeting of global movements that are similarly driven to fight the effects of hegemonic globalization. WSF first took place in Porto Alegre, Brazil, and gradually traveled to different parts of the global South like Mumbai, Nairobi, and Dakar. In 2002, WSF came together with the broad agenda of fighting against capitalist exploitation and the collective hope that "another world is possible."

Since 2002, the agenda of WSF saw many manifestations—significant among them is the organizing of United States Social Forum (USSF) [18], which later morphed into a culture of Southern grassroots organizing in the U.S. South as well. This culture of movement building and organizing has been centered around and led by the life experiences of BIPOC in the U.S. South while being laterally connected to similar struggles in the Global South. The Black freedom movement in the U.S. South [11, 13] had previously been connected to broader movements against casteism and racial capitalism in India [15, 19], Africa [20, 21], and beyond. The USSF agenda re-established U.S. South's connection to Black Radical Traditions [9] that flowed through notable movements such as the Haitian revolution [18]. Here, I think it is important to note that not all movement organizations that are geographically based in the U.S. South subscribe to this culture. Even if they do so in practice, not every organization in the U.S. South consciously identifies WSF/USF as one of its roots. Therefore, by writing about the Southern grassroots experience of ICTs, I do not mean to generalize ICT-use by all movement organizing taking place in the U.S. South. Instead, my goal with this thesis is to only speak to the experiences of Southern grassroots movements that explicitly associate with Southern grassroots traditions.

Going back to the agenda set by WSF: the turn to situated knowledges of the South in movement organizing was a deeply technological endeavor. In the sense that it made use of the technologies traditionally available to the global and local communities involved, for instance, tech-

niques of community building against colonial oppression. With time, the meaning of technology changed in the globalized market as well as in public perception, and so did the meaning of technology in the context of movement organizing. This change was mostly toward information technologies—Facebook, Twitter, and other ICT platforms started defining what technology was in a movement setting. ICTs opened up a whole new dimension to the Southern agenda of a global movement against hegemonic globalization—solidarity beyond borders was easier to imagine with advanced ICTs [6]. Movements could gain instant momentum via social networking sites and video conferencing facilities with little to no financial burden. Despite the well-argued culturally problematic foundations of the Internet [22, 23], these technologies were also being subverted globally toward political goals of movement organizing [24]. My research in the U.S. South began on this note of ICTs being acknowledged as a force of efficient organizing and a blessing to the movement culture overall. In this thesis, I show that the same technologies that came with the blessing of efficiency also came with the cost of constructing a new margin within these movements. People who had the race, class, gender privilege associated with owning technology [25] and the expertise to manipulate it ended up at the center of these movements, and at the margins were the people who have been historically marginalized by the culture of science and technology—an outcome that is in entire contradiction to the agenda of WSF and its satellite movements.

## 1.2 Locating Information Technologies in Grassroots Praxis

Positioned in the broader Southern landscape, my collaboration with grassroots social movements with the U.S. South has been about locating ICTs in the movement fabric. Toward this, I first and foremost looked for the mundane ways in which ICTs pervade grassroots movement organizing [4] and the costs of marginalization associated with these dependencies [5]. Secondly, I facilitated several participatory workshops in rural towns of the U.S. South toward collectively analyzing the marginalized experiences of ICTs in the movement. My goal with these workshops has been to relocate ICTs back into the movements' fabric in their totality—i.e. not just as ar-

tifacts supporting efficient organizing, but also as market monopolies that directly benefit from the marginalization of the already marginalized [3].

In this sense and many others, my research, its goals, and its outcomes would not be possible without the foundation of the grassroots infrastructure of the South. I want to take this opportunity to elaborate more on what that grassroots infrastructure looks like—both materially and philosophically. My goal with this section is not so much to give a universal view of what grassroots infrastructure is, as it is to paint a picture of the rich traditions and structural qualities of community organizing I had the privilege to build my work on.

Grassroots, philosophically, has to do with the idea of basing social movements in realities experienced at the roots of a society [26]. At the heart of this philosophy is the place "where common people are born, live, and die" [27]—it is believed that political success lies in grounding our movements and social analyses in that place where power structures governing a society are experienced in its most authentic sense [28].

The idea of "roots" in philosophy is not without critique. Notably, Gilles Deleuze and Félix Guattari [29] argue against the metaphor of roots alone, noting that a root of a plant is actually a stock that dominates its anatomy, killing all other organisms around it. As an alternative, they offer us the metaphor of *rhizome*. French-Caribbean writer and poet Édouard Glissant builds on the rhizome metaphor in his anti-colonial theorization of the Caribbean identity. He explains rhizome as "an enmeshed root system, a network spreading either in the ground or in the air, with no predatory rootstock taking over permanently The notion of the rhizome maintains, therefore, the idea of rootedness but challenges that of a totalitarian rot" [10]. The centralized power structures emerging in both the U.S. South as well as the Global South in the twentieth century both constituted as a fertile ground for the development of a *rhizome-like* grassroots culture.

Thus, the grassroots culture in the Southern context is very much a political project that questions the centralization of governance. Toward this goal, it strives to mobilize individuals at the local level toward collective action for the improvement of their own situation and that of broader society [30, 31]. This is practiced with a bottom-up approach toward movement building

that starts with addressing local issues and further tries to effect change at the regional, national, and even international level [32]. At the core of the grassroots strategy is the belief that every individual is capable of reflecting, conceptualizing, thinking critically, making decisions, planning, and acting toward social change [33, 33]. Therefore, with a bottom-up infrastructure of decision-making, grassroots movements strive to foster democratic participation by letting every individual exercise their power and voice. They further leverage the models of democratic decision-making (e.g., voting, consensus building, assemblies) and practice self-organizing and self-governing [34, 31, 35]. Their commitment to the grassroots philosophy can be realized in practical ways of how collective resources are managed and governed with non-hierarchical structures. I am particularly indebted to this foundational characteristic of grassroots infrastructure—without such a non-hierarchical distribution of power, it would have been much harder for me as a researcher/activist from the outside of the U.S. South to truly experience the complex role played by ICTs in this infrastructure, let alone effecting change in that dynamic.

Beyond its conception of a political project, the grassroots culture can also be imagined as a form of subjectivity and sociability. Santos describes a facet of this subjectivity as "a way of being and living permanently in transit and transitoriness, crossing borders, creating borderland spaces, open to risk—with which it has lived many years[...]—accustomed to enduring a very low level of stabilization of expectations in the name of a visceral optimism before collective potentiality" [7]. This optimism becomes a rigorous practice in much of the BIPOC communities of the U.S. South—as an SMA member notes "hope is a discipline." Needless to say, my work of collectively facing the highly unequal realities of ICT culture and further imagining an alternative culture of ICT-use would be impossible without this existing infrastructure of hope and joy.

Most importantly though, the cultural trait of Southern grassroots organizing that my work heavily depended upon was its steady commitment to a synergistic use of theory and practice, or as this is known in philosophy: *praxis*. A core outcome from WSF was the culture it bore of opening up a movement space to multiple theories of social transformation. This inclusiveness has only privileged "commonalities to the detriment of differences and fosters common ac-

tion even in the presence of deep ideological differences, once the objectives are limited, well defined, adopted by consensus" [7]. This also meant that the communities were already receptive to grounding themselves in theories of technology that would help in relocating ICTs in a new and more critical light.

## 1.3 Goals of the Dissertation

It is in this sociopolitical, historical, and ontological context of Southern grassroots organizing, that I situate my work. In this dissertation, I will be reporting on my *action research* with grassroots social movements located in the U.S. South. Since 2016, I have participated in one local grassroots organization and then in a large regional movement—both have been accomplished in the dual capacity of a community organizer and an HCI researcher. In both communities, my intentions have been to critically explore the role ICTs played in the culture of Southern grassroots organizing.

In Chapter 2, I will discuss the primary methods of inquiry I used to approach my research questions, situating those choices in my personal history as an individual and a community organizer rooted in the Global South. In this chapter, I shall further share my theoretical commitments. I use a constellation of theories—while the theories of social transformation used in my work are of non-Western origin, the theories of technology and technology-use I apply to my findings are from Western scholars who explicitly engage with the problem of using Eurocentric theories to make sense of subjugated people's relationship to modern technology. In Chapter 3, I share my findings and analysis from the local movement organization that I helped build called the Science for the People, Atlanta (SftP-Atlanta). In this chapter, I share what it means to build up a grassroots movement from scratch in the U.S. South, especially the role of ICTs in that endeavor. In Chapter 4, I will discuss my work with a larger movement group that SftP-Atlanta became a part of—i.e. the regional movement of the Southern Movement Assembly (SMA). Joining a regional Southern movement exposed me to a whole new dimension of technology experience—the tensions between rural vs. urban experience of technology, the systemic

patterns of exclusion perpetuated via ICTs–to name a few. Further in this chapter, I plant the seed for an alternative, more critically grounded relationship with ICTs that Southern grassroots movements can benefit from cultivating—a vision I term as "Grassroots Technology Practice." In Chapter 5, I share my experience of co-designing that Grassroots Technology Practice with the regional movement of SMA. Through workshops and community building across the U.S. South (centering the rural parts of the South) as well as through iteratively designing culturally meaningful artifacts, the community has begun to enact a more politically grounded structure via ICTs. The work of building a grassroots future of technology practice is not done, of course, this is a work that will have to long term project for the future years. Concluding this dissertation, I share my vision for that future of a grassroots praxis of technology in Chapter 6.

# CHAPTER 2

# METHODS AND KEY THEORIES

In Chapter 1, I shared one of the key characteristics of Southern grassroots organizing—*praxis*, i.e. a combined application of practice and theory—as a choice I have also made in my research inquiry for this dissertation. Explaining the grassroots praxis, one of my participants noted (see Chapter 4) "to me it is both a practicality and a desire"—not only do we *need* to begin this work from the lived experiences of subjugated people but also we *want* to do just that. Similarly, I recognize that my choice of *participatory action research* as a primary method of inquiry for this thesis was driven by my own positionality and my desire to use that as a lens. Additionally, the research questions I developed with grassroots communities I studied in this thesis further necessitated that approach and the associated research methods. In this chapter, I share the *main methods* I employ toward understanding the grassroots experience of Information Communication Technologies (ICT) and *key theories* I use to make sense of the data from my research inquiry. I share my methods and theoretical commitments in the light of my own *positionality* in relation to this dissertation and the U.S. South.

Following, I first share what practicing technology in the South has meant for me—i.e. my positionality in the geopolitical fabric of the South in §2.1, and details on the methods applied in understanding the grassroots experience of ICTs in the South in §2.2. Next, I share the key theories I have used iteratively in my research in §2.3—i.e. a theory of social transformation that systematically tackles the process of grassroots movement building from a Southern perspective (2.3.1), and theories[1] of technology and technology-use from a range of perspectives including works in CSCW, HCI, Social and Critical Informatics, and so on (2.3.2).

[1] The theories of technology and technology-use that I have most commonly used in my analyses acknowledge and address the Eurocentric bias of technology studies.

## 2.1 Practicing Technology in the Global South: Positionality

My interest in the question of public accountability of technology arose from my experiences growing up as a cis-gender woman in the state of West Bengal in India. I believe that my upbringing, along with my prior work in technology activism in the Global South, played a key role in leading me to the research questions I answer in this dissertation.

I grew up with significant caste privilege as a Brahmin person in India [15]. Although I grew up seeing my family explicitly reject Brahminism, I think it's important to ground my positionality in relation to the work of this thesis in the privilege I have held as a light-skinned brown person of the Brahmin caste. The caste privilege, however, came to me not as a piece of token demographic information about my identity, but as a cautionary tale for how the very status that I hold in Indian society has been weaponized against those marginalized by the caste system. Brahminism for me has always represented a systemic mechanism that is at the core of many injustices reigning in the world, including the systemic harm caused to the Dalit (the untouchables) and Adivasi (indigenous) peoples of India.

I can recall my early days of connecting caste and class status to technology. Growing up, I saw my father—an electrical engineer by training—work at a thermal power station. Because of my father's profession, my early childhood days were spent in a make-shift town surrounding the power station—which meant that even in the earliest memory of my life I was in close proximity to an industrial project involving technology. Being a single-income family in rural Bengal that included a technology worker made us an upper middle class (by the standards of the Indian economy in the early 90s) family with sufficient financial privileges too. But unless explicitly stated systemic privileges generally tend to appear as just life—normalized and taken for granted—not just for ourselves but also for the whole world. I was fortunate to have an upbringing that told me otherwise. I was reminded in no uncertain terms that the land where this mega-industrial project of thermal-powered electricity was taking place was acquired by displacing several indigenous villages that previously lived in and owned that land. Compensation was promised but not fulfilled

as measures of accountability were never strict—our very own monument of technological advancement harmed the lives of people and communities that lacked the socially accredited status of class and caste. This political analysis was always there as a necessary truth in the narrative of our lives in the technology-land—a truth that we needed to reconcile with and make amends for. This is to say, in own my life, I never knew technology without this other half of the story—the half that is often invisiblized in the popular narrative of technology.

Needless to say, I come from a politically engaged family. My grandfather—a freedom fighter involved in struggles against the British colonial regime as well as in post-Independence political struggles—was the most politically active individual and organizer I saw in my immediate family. Due to his organizing commitments and political work, I grew up being surrounded by a larger *community* of people either representing a certain political party or rallying for civil and human rights from outside of the realm of electoral politics. When I think of my positionality in the movements of the South I first and foremost think of this upbringing. One that taught me that hard truths like the one about the power station were, never to be discussed without its politics, and, always to be processed with the community.

Apart from my upbringing or perhaps precisely as a result of it, in my youth, I got involved in the movement of free and open-source software (FOSS)—with collaboration and collective action, we exercised a steady focus on questioning corporate means of technology production. Through my work as a software engineer and a community organizer (in West Bengal, India) with the movement of free and open knowledge led by Wikipedia, I came to realize that while technology activism around FOSS raised important questions about means of technology production, our activism was often detached from ongoing social implications of technology. Technology activism continued to be a domain for self-identified technology experts—which both in the context of India and the Western World of FOSS—were predominantly middle-class cisgender males with significant educational privilege. On the other hand, in my home country and beyond, technology was (and still is) being positioned as an object of power used by traditional power structures of the state, market, etc. to disproportionately affect people from marginalized

race, class, gender, caste, and other normative statuses. Even when technologies such as Aadhar—mass-scale, government-sponsored biometric authentication for access to public services—were resisted, such movements were far detached from the lived experiences (with notable exceptions such as [36, 37]) of the people that were most affected by these technologies. I saw this divide as a problem with serious consequences for the politics of a long-term socially grounded movement as it also indicated a latent assumption from the technologically elite class that poor people, rural people were not "literate" enough to join the cause. It is at this juncture of conflict, I went to a village in Himachal Pradesh, India, where I spent the next several months understanding whether critical relationships with technologies already exist in people systematically affected by them, and further uncovering ways in which this relationship can be cultivated to form a resistance against technology-mediated oppressions from the ground up.

## 2.2 Practicing Technology with Grassroots Movements in the U.S. South: Methods

In 2016, I came to the United States to pursue my agenda of accountability in technology—a place that always, at least from the Global South view, was at the epicenter of Western technological advancement. I specifically wanted to situate my work at this epicenter with a focus on understanding how technologically mediated societal realities were being dealt with, mitigated, and resisted by the people within the most excluded by this project. At the same time, I looked for ways to connect and utilize my Global South experience in my doctoral research—leading me to position myself in the U.S. South. I got involved in movement organizing in the U.S. South within the first few months of arriving here—for this, I see both the 2016 U.S. presidential election and my past networks from software freedom advocacy as key factors that helped in manifesting that goal. I share more on this story in Chapter 3 while discussing my work with the local movement organization I helped build in Atlanta, Georgia.

Toward understanding the relationship between movements and their ICTs, I do *participatory action research*—both studying movement communities and meaningfully supporting them in their political agenda.

### 2.2.1 Participatory Action Research

As an alternative to ethnographic observation from a distance, the theory of action research exists as a participatory research method which uses "action disciplined by inquiry, a personal attempt at understanding while engaged in a process of improvement and reform" [38]. Action researchers typically start with establishing meaningful relationships in the communities they study, participate in actions that benefit the community and their goals, collectively form research questions that all parties are interested in answering, while simultaneously studying and evaluating that research question with various participatory methods [39].

Action research exists as a more involved research process used both in industry settings and the academy. Action Research was first introduced to the Northern traditions by Kurt Lewin [40]. Concerned by the positivist trends in research from an objective distance [40], Lewin proposed an alternative way of looking that is more grounded in the lived realities of people [41]. Action research has been used for community-based research in several academic disciplines leading to meaningful human-centered outcomes [42]. HCI research, too, turned to participatory action research for this purpose of human-centered design work [43, 44]. Notably, Gilian Hayes suggests action research as a method of inquiry that HCI researchers aiming to work with communities may choose [45]. As Hayes points out, action research aims to implement some constructive change in the community. Therefore, "AR researchers must understand the values they and their community partners bring to the project so as to interrogate explicitly what they hope to achieve, why they hope to achieve it, and what makes them believe the solutions they are attempting will do so" [45].

### 2.2.2 Overview of Data Collection & Analysis

Overall, my research embodies grassroots *praxis* of collaboration in that my work can be conceptualized as a cyclic process of action and reflection. While the grassroots actions I co-facilitate help me gain first-hand knowledge on the role of technology in my empirical setting, toward a more reflexive take on it, I gather and analyze my findings with three value-driven inquiries that

Table 2.1: A summary of the qualitative tools I used toward applying the overarching method of participatory action research

| Data collection | Analysis | Design |
|---|---|---|
| • Field notes from participation *Sept 2016 - Jul 2020*<br>• Over *twenty five* semi structured interviews<br>• *Three* participatory workshops | • Reflexivity & Positionality<br>• Conceptual engagement with several theoretical works, notably, i) Liberatory pedagogy of social action ii) Technocultural Theory iii) Practice Theory<br>• Inductive analysis | • Iterative design<br>• Ongoing reflection/evaluation |

inform each other. Toward an *empirical inquiry* into the topic, I build on tools and techniques from qualitative research and design research such as semi-structured interviews. The empirical findings I gather from the site are then informed by *material/technical inquiries* driven by communities' needs. Typically these inquiries involve participatory design activities, participant observations, and iterative design. Situating my findings and observations within the broader historical and analytical context they occur in, typically, I perform inductive analysis toward *generating theories* from my data [46]. Here, I mean "theory" broadly, including conceptual frameworks, explanations, constructs, and models of sociotechnical processes [47].

In Table 2.1, I summarize the various qualitative tools I have used for this dissertation from September 2016 till July 2020. For the detailed methods of participation, data collection, and analyses associated with the three studies reported in this dissertation, see in their corresponding chapters (particularly Sections 3.3, 4.2, and 5.2).

### 2.2.3 Ethical Considerations

With that overview in mind, I would like to share some of the ethical considerations I took into account in each step of my research trajectory—from establishing a partnership to data collection and analysis to publishing outcomes. In what follows, I share the steps from my action research

and the ethical considerations taken into account in each step. These steps are abstracted from the overall research trajectory, though as noted by previous research ethnographic, community-centered research on the ground often is "messy"—as messy as the real world itself [47, 48, 42]. I embrace that messiness in my work and try to capture some of that complexity in my reporting of the process.

*Relational work*

While the two communities I worked with were different— both structurally and in their political and philosophical commitments, my relationship with both had a similar research trajectory. For me, it began with attending an event hosted by the community organizations. As stated earlier, in my personal/political life too, I seek out community organizations I can participate in. While research interest can not ever be cleanly separated from that intent, my relationships with community organizations I have studied were primarily rooted in my activism goals. In both cases, I explained the parts of my identity—introduced myself as an individual interested in understanding the role of technology in movement organizing. My organizing background as well as my technology building skills have both been useful in making these connections, especially in establishing trust and accountability. In both of my community relationships, I volunteered my skills and labor to the movement for at least three months before a research goal was collaboratively established. I also spent time learning from the communities as I participated in actions and tasks that were assigned to me.

Embedding myself in a community organization and offering material outcomes to the community beyond academic research have been a conscious ethical choice. An ethical stance that is at the core of participatory action research [45].

*Establishing (transnational) solidarity*

The relationships I developed with BIPOC activists of the U.S. South were grounded in *solidarity*, especially in the "south-south connection" that cultural theorist Anne Garland Mahler talks

about in her book "From the Tricontinental to the Global South: Race, Radicalism, and Transnational Solidarity" [6]. This dissertation covers some of what the South has meant to me, especially in the transnational sense that I use the concept in this dissertation (§§1.1 and 2.3.1). In that, I have shared how my Global South community organizing background has been a driving factor for the choice of the topic of this dissertation. It has played an equally critical role in shaping how I have conducted participatory action research in the U.S. South. Establishing research partnerships grounded in this transnational Southern solidarity meant—quite materially—sharing analyses, reports, knowledges, and relational networks I built and maintained in my Global South organizing past. For example, while building up the movement of SftP-Atlanta, I greatly leveraged my existing Global South connections for a range of movement resources like—funds, or in several instances, organizing experiences and meeting notes from a similar effort I had been part of in the past.

The legacy of transnational solidarity in movement organizing of the South is a rich one and can be found throughout the history of global political resistance. Notably, Tricontinentalism—a transnational solidarity politics that has fostered international solidarity among the U.S. Civil Rights movement, anti-apartheid struggles in South Africa, Afro-Latnix resistance, etc. since 1966—primarily framed its struggle through the Jim Crow South. In doing so, this particular solidarity politics "portrayed the U.S. South as a microcosm of a deterritorialized empire and presented its global vision of power and resistance through the Jim Crow racial binary of white and color" [6]. Similar solidarities emerged between Pan-Africanist and Black American Sociologist W. E. B. Du Bois and Indian Dalit leader, economist, and social reformer B.R. Ambedkar [19]. This is to say, while my experience as a light-skinned brown person from the state of West Bengal, India can never be equated with the Black experience in the U.S. South, I was able to still establish meaningful solidarities with my fellow movement organizers of the U.S. South. I share this to disclose that although I chose to apply a research method that does not mandate such a connection, it does call for relationship building [42]. For me, applying participatory action research grounded in affective solidarity [6] ended up strengthening my relationships with these

communities [42], and in turn, solidified my ethical stance toward conducting this research.

*Co-constructing research questions*

After relationships evolved into a state of trust and accountability, I became more open to forming research questions with the community partners. In both cases, I had an immediate base of people who were similarly driven to work on the technologies of the movement and an extended community of people who were stakeholders and active supporters of this smaller "technology team." In both cases, I found this division of labor/expertise as a double-edged sword especially in the case of technology-maintenance—a phenomenon that I share with my findings in the following chapters. Invisible structures and power relations such as these are a unique challenge for participatory research though not uncommon for non-hierarchical community organizations [49]. For example, in the case of SMA—the regional movement I partnered with—the structure was lateral but not leaderless. To establish a research partnership with organizations with such lateral structures, I had to make my work and intentions known to the more central figures in the community. Though I was never required to get formal approval from these leaders, their support and interest in the purpose of this dissertation played an essential role in approaching the rest of the community for research collaboration.

I share this context to point out that while research questions were formed as negotiations exchanged between the smaller group of technology-maintainers including myself and the larger community, it required careful ethical examination on my part. I specifically tried to make sure that we worked through the internal power dynamics toward a set of research questions that represented the interest of the people at the peripheries. In doing so, I was careful that my work did not end up representing the interests of the "technology-experts" in the community alone, or that the research questions we identify do not end up being the expert-eyes'-view of lack of expertise in the broader movement [50]. In both cases, the research questions were intentionally formed with representatives from a diverse group of people within the community. For instance, in the case of SMA, toward gathering the situated knowledges of people in various power positions

within the community, research questions were formed in a group consisting of (but not limited to) elders in the community who were asked to share their wisdom on past technologies of the movement, youth organizers who experience technology-mediated surveillance in their schools, urban organizers who work at technology firms of the present day, etc.

*Sharing of research plan with the community*

Once initial questions were formed and possible research methods were brainstormed within the community, I requested approval from research from the Internal Review Board (IRB) that included documentation of the community values and goals. The communities had knowledge of this process and of how they were represented to the IRB. At the same time, I also sent out a Google Document[2] sharing the research plan with the community to get their approval on the work I would be doing in the next months. This plan was shared both through electronic and non-electronic means. For several elders of the community with limited access to technology and those I could not hand-deliver a plan, I called them on phone to discuss and get their feedback on the plan.

This refers back to the first step of the process—forming relationships with care—in both cases the people representing the community became close to me. I also checked in on these relationships—outside of research or community-related needs. Unconditional care is a part of grassroots ethic, and I committed to practicing that in my work (and in my life) as well.

*Participant observation and data collection*

Once the plan was discussed in detail, I continued participating in both online and offline meetings of the community as usual. In meetings, I noticed whenever someone said particularly useful for the research goal, and further asked their permission to report that in my writing. I took detailed notes in the meetings—I typically avoided any interpretation at this stage and recorded the actions as they were happening. For physical meetings, I distanced myself for at least twelve hours

[2]For example, this was shared at the beginning of 2019 with the Southern Movement Assembly: `https://perma.cc/69YN-TQEV`

before jotting down interpretations.

This practice, too, was an ethical choice driven by my everyday involvement with the community. Although I do not claim my research to be free of "insider bias," I did try to capture the narrative from the various position of distance from the community as much as I could [51].

*Sharing research outcomes iteratively with community partners*

Throughout, I shared smaller outcomes from my research and analysis. For example, in an online meeting, while sharing my research updates with the community I brought up how a theoretical framing has been particularly helpful in making sense of an event. I also sought out feedback on analyses at different points in time.

It has been documented extensively how community organizations such as the ones I partnered with are overburdened with analyses [52]. I considered it to be my responsibility to not overwhelm them with research data, outcomes, analysis, and most importantly my lens through which I saw a community. At the same time, I chose to stay accountable for their judgment of my thesis. Periodically sharing outcomes and analysis was an ethical choice toward that goal.

*Sharing research outcomes to the academic community*

Reporting my findings and analysis to the outside world, to academia, for me was perhaps the one that required the most critical examination. Both communities wanted to be named in my publications, however, both communities found it necessary to have control over how much of their political analyses were revealed through my work. Many of the examples and data I reported in my work, therefore, did not expose the strategies, techniques, and analyses of systemic issues that these communities perform in their meetings. This was critical, not only for their safety but also for preserving agency over their own narratives [53].

### 2.2.4 Evaluation

Following the notion of participatory action research, the evaluation of my work was done in an ongoing, reflexive manner. Grassroots praxis is aligned with participatory action research, in that they both advocate for an iterative and reflexive process of creation: action leading up to reflection, and then reflection informing action [54, 33, 9, 2, 45]. Grassroots evaluation is therefore continuous, ongoing reflection [2]. Therefore, for the purpose dissertation, I committed to a reflexive evaluation of both the process and the material outcomes of my action research. This took place throughout our partnerships–as a participatory process involving both the community and myself. For both community organizations I worked with, I stayed involved in the movement as they used the tools we collaboratively designed—I responded to the evaluations of both the artifacts and the process from the community. Both communities already had an infrastructure for evaluating ongoing social actions they participated in [7, 2]—eventually, the evaluation of my work became a part of their routine examination of existing practices.

Further, the partnerships I established with the communities are long-term relationships that I plan on staying accountable to for the foreseeable future. This is to say, participatory evaluation and iterative design of artifacts and community principles that my research has contributed to will continue to be an essential part of the future of my relationship with them.

## 2.3 Theorizing Technology-use in the South

My research draws heavily from a range of theories that help me make sense of how technology is perceived and used by BIPOC in the U.S. South, especially in its rural parts. As stated before, this turn to theories of social transformation or technology is by no means a replacement for the deep knowledges gathered through the practice of technology in the U.S. South and the Global South I participated in. Instead, I see them as tools necessary for including the historical context of power and patterns of resistance into my analysis of technology-use in grassroots spaces. In this quest, I have first and foremost stayed open to learning about the theories of social transformation that

Southern organizing groups themselves subscribe to—grassroots organizing in the South (both U.S. and Global) are rich in their engagement with non-Western critical theory. In my work with the movements, I have exercised a steady commitment to this aspect of grassroots praxis.

In what follows, I first discuss some of the theoretical contexts that helped me make sense of the South as an epistemological, ontological, and geopolitical phenomenon. Particularly, in this regard, I share in detail the philosophy of Brazilian educator Paulo Freire whose pedagogy of social action deeply influenced the movement organizations I discuss in this dissertation. Next, I will look for both past and contemporary theories of technology-use toward establishing technology as something that not only needs to be understood both in relation to the practices surrounding it but also needs to be examined as a practice itself. With this, I aim to accomplish the following: i) I want to establish these theoretical foundations as the ground for what my findings in the next three chapters are analyzed against ii) I also see this collection of theories as a contribution of its own, especially for scholars who wish to make sense of situated uses of technology in their totality.

### 2.3.1 The Southern Question in Grassroots Praxis

Here, I attempt to construct an abstract understanding of what, who, and which places I speak of with the concept of Southern grassroots experience. My empirical research has been based in the U.S. South—particularly, I have traveled with movement communities to both attend and facilitate meetings in the rural towns of Mississippi, North Carolina, and Alabama. My research has been based out of Atlanta, Georgia. Although my Atlanta experience is predominantly an urban experience of the South, the tensions within rural vs. urban U.S. South are present through all of my findings. These tensions are significant also in the broader question of how to see the South as a single unit. I do not answer that question necessarily, though, I do dissect the role information technology has played in shaping the tensions between rural and urban parts of the U.S. South. The South, therefore, in my empirical work, is primarily a view from the U.S. South. That said, as I have mentioned before, the movements I have studied explicitly wanted to further the agenda of a global Southern movement. This is obviously related to WSF's agenda of global

movement building, but in my experience, the desire to build a movement that brings together the lived experiences of colonial oppression, forced migration, labor exploitation can be traced further back to Black histories of the South. BIPOC in the U.S. South—throughout their experiences of genocide, slavery, poverty, and segregation—have seen their struggles to have parallel threads to that of the Global South countries (e.g. the Dalit experience in India). The South in this grassroots question is unified in its critique of whiteness in addition to its critique of capitalism. The Southern identity in my research and the writing of this dissertation appears as all three: a geopolitical entity, an epistemological position (ways of knowing against capitalism and whiteness), an ontological phenomenon (ways of being as a Southerner).

*Liberatory Pedagogy by Paulo Freire: A Southern Grassroots Praxis*

In an attempt to understand the epistemology as well as the ontology of Southern grassroots organizing, I draw from the liberatory pedagogy of social action as formulated by the Brazilian educator and philosopher Paulo Freire [54]. Freire, influenced by Marxist and anti-colonial ideologies, advocates for an emancipatory practice of education, the crux of which is to enable individuals to take part in collective social action.

This critical pedagogy further states that social action should be driven by praxis: a combination of action and reflection. Freire believes that individuals have the capacity for reflection, for conceptualizing, for critical thinking, for making decisions, and for planning toward social change. Therefore, to enable democratic participation in social movement organizing is to make sure every individual involved in the movement gets to exercise their "right and power to intervene in the social order and change it through political praxis"[54].

Freire's philosophy of praxis regards dialog as a tool for individuals to achieve the critical consciousness that can lead them toward emancipation. Furthermore, it is through the practice of reflexive dialog that a collective sense of identity and solidarity is formed. However, according to Freire, liberating pedagogy cannot be reduced to either verbalism or activism, it must be a combination of both. As one of the footnotes from Freire's seminal book "Pedagogy of the Oppressed"

reads [54]:

$$\left.\begin{matrix}\text{Action}\\ \text{Reflection}\end{matrix}\right\} \text{word = work = praxis}$$

$$\text{Sacrifice of action = verbalization}$$

$$\text{Sacrifice of reflection = activism}$$

Building off of Freire's philosophy of praxis, the participatory communication model of social movement organizing stresses the importance of democratization and participation at all levels—international, national, local, and individual [55]. Participatory communication theory emphasizes the importance of practicing reciprocal collaboration throughout all levels of participation [55]. This implies that listening to what others say, respecting others' attitudes, establishing mutual trust, and believing in the ability of the masses to develop themselves and their environment—all of these are crucial to the growth and sustenance of a social movement organization [55].

Freire continues to inspire and influence grassroots movements of the South. The local movement organization I describe in Chapter 2—Science for the People, Atlanta—was notably inspired by this pedagogy, leading to building up a movement from the ground up with the same values. Their steps toward collective action can be described with the help of the Freirean model of participatory communication theory. The participatory communication model suggests that grassroots movement organizing typically follows three steps toward sustainable movement building [56].

- **Forming a collective identity.** This step entails a careful analysis of the power relationships that shape structural inequalities in each social and historical context. Through this analysis, the collective identity of the organization, and the initial framing of the movement will be formed.

- **Mobilizing toward collective action.** This strategic analysis informs the next phase, in

which individuals involved in the social movement cooperate to bring change through collective action.

- **Engaging in reflexive dialogue.** Finally, the third and the iterative step in this model of movement organizing is reflection. By encouraging reflection about framing practices, participatory communicators foster ongoing reflexive dialogues that build new generations of leaders and extend relational networks.

While these steps of movement building are somewhat sequential, they do not result in a linear process of organizing. Similar to the cyclic nature of Freire's pedagogy (action informing reflection; reflection influencing action), this process is also iterative. Grassroots groups often do not create a collective identity in a vacuum. Instead, the identity of the group develops through the process of organizing collective actions; similarly, engaging in reflexive dialog results in more meaningful collective action. As a result, these steps of movement building end up being interdependent in reality.

While the Freirean model of participatory communication theory provides a powerful lens to understand SftP-Atlanta's process of movement building, as social computing researchers we wanted to understand the role of their sociotechnical practices in supporting the organization in their process of day-to-day organizing. It is this inquiry that led me to the first research question of my research: *what is the role of social computing technologies in supporting the process of grassroots movement building?*

### 2.3.2 Understanding Technology and/as Practice

In naming this section, I am inspired by Communication scholar Wendy Chun's formulation of *race and/as technology* [57]. She argues that this particular phrasing (and the underlying analytical framing) allows for a special kind of nuance that then adequately captures the dialectical relationship often existing between race and technology. In that, two essential insights are gained in the conjoining of "and/as": i) the ways in which race *and* technology impacts each others' logic and development, and ii) the patterns and similarities that make race pose *as* a technology at times. I

follow Chung's footsteps and attempt to bring together two lines of thought that are similarly related: i) the scholarship around technology *and* its impact on (individual and organizational) and practices (e.g. [58]), and, ii) an adjacent body of work arguing for technology to be seen *as* a practice of its own (e.g. [59]). These two lines of thought have engaged with each other, contributing meaningful critiques and insights that only enriched both fields. For my work, and the broader context of technology-use, I find both useful in meaningful ways. In what follows, I shall describe where each is coming from and where they intersect. Like Chun, I found, that conjoining the two bodies of work allowed us a nuanced point of view on grassroots use of technology.

### *Technology and Practice*

Technology in the fields of Computer-Supported Cooperative Work (CSCW) and Human-Computer Interaction (HCI) have been explored extensively for its influence on individual, collective, organizational practices. Notably, among these theories, sociotechnical systems theory suggests that social and technical systems are interlocked and interdependent [60]. Emerging primarily from studies on the relationship between people and technology in the (western) workplace [61, 62]—this framing suggests that workers relate to technology in more than just instrumental ways [63, 64]. Over time, the implications of these technologies became increasingly prominent in everyday American life (i.e., beyond the workplace) with commercial efforts of integrating information technology in society—affecting both the lives of those who could afford (information) technology [61, 65] and those who could not [25].

For those who could afford digital technologies, these sociotechnical implications included seemingly mundane changes in everyday ways of being [66], such as in workplace dynamics [63], interpersonal relationships [67], expression and construction of individual identities to a broader society [68, 69], public perceptions of privacy/security [70, 71], and so on. These were widely looked at by research fields such as Social Informatics [72] in addition to being discussed in CSCW and HCI [61]. A central thesis that emerged out of these disciplines is that there needs to be a more intentional connection between human values and design of technologies [73]—a

theme that challenged the more technologically deterministic notion [74] that suggests technological innovation is something that the broader society eventually catches up to [75].

Among the few comprehensive frameworks [76, 77, 78] that allow us to consider the notion of values in broader HCI research and practice—perhaps the most notable is Value Sensitive Design [79, 73, 80]. Friedman proposed the term value-sensitive design (VSD) suggesting that designers and technologists need to take more proactive measures in engaging with human values and social contexts of technology use [80]. Friedman et al. defined VSD as "a theoretically grounded approach to the design of technology that accounts for human values in a principled and comprehensive manner throughout the design process" [73]. They formulated VSD as a constellation of value-sensitive practices that existed before on their own with separate design fields such as in computer ethics, social informatics, CSCW, and participatory design; VSD was thus envisioned as a combination of forces from these disciplines. VSD does not present itself as an academic discipline, in fact, to this day it maintains its identity as a design approach with numerous empirical studies [73], methodological recommendations [81], toolkits [82], and recently, a book [80].

Yet, technologies even when made in a value-sensitive way—in that they follow the value-sensitive methods and procedures in a technical sense—still have complex implications for society [3, 4]. The call for value-sensitivity did not eliminate the more fundamental conflicts of technology and society—in fact, sometimes it obscured our understanding of the sociotechnical implications that are rooted in human values itself [3]. For example, the emergence of digital technologies and its broad adoption also resulted in a new underclass of people who could not afford to use, consume, relate to Information and Communication Technologies (ICTs) with the same privileges [25]—even though the meritocratic ideal of the cyberspace promised it would move past such pre-existing inequities [83]. While this notion of "digital divide [84]" was initially framed as a binary distinction between who could or could not afford to buy and subsequently *use* technology, more recent work has urged to consider the question of who has the privilege to *design and develop technology* as well [25, 85]. This implied that even with an intentionally

value-sensitive approach (the majority of which never explicitly engaged with such sociotechnical implications of inequity at a fundamental level), ICTs were still made with and for the values of a select few [86, 87, 88].

Beyond influencing broader societal practices, the implications of popular technical artifacts being used in community-based organizing practices are worth discussing too. Community informatics scholar Amy Voida reports extensively on the use of information technologies in nonprofit organizations, noting how existing ICTs do not meet their needs properly [89, 90]. CSCW researchers Prost et al. do an in-depth study on the tensions that arise when ICTs are used to establish a cooperative advocating for food democracy [91]. My work with the local grassroots organization that I discuss more in Chapter 2 studied the use of technology in a growing movement from its initiation [4]. Specifically, I found that "inclusivity, privacy/security, and social translucence" are common grassroots values that popular technical platforms do not embody, and therefore these artifacts can not comfortably be used in grassroots environments. Additionally, these some of these values, such as inclusivity and privacy, can be at odds with one another and require designers to examine how the values exist in relation to one another [92].

A key theme across most of the studies having to do with values (including the study I report on in Chapter 3) is the loyalty toward understanding situated uses of technology exercised by fields like CSCW, HCI, SI. This loyalty is rooted in social constructionist beliefs: society is impacted by technology in important ways, and in turn, society also impacts the design and evolution of technology [75]. Technology, therefore, in this view, is developed through a socio-political process that leads structures being inscribed into technology. To study technology use is to then understand the ways in which human actions determine how technology structures are used—a phenomenon commonly known in CSCW scholarship as "appropriation" [93]. Appropriation of technology is defined as "a network of activities that users continuously perform in order to make a software "work" in a new environment, shaping the artifact as a material as well as a meaningful object [94]". Theorizing technology use, DeSanctis and Poole make a distinction between "faithful" and "unfaithful" appropriations of technology structures "highlighting the degree to which

uses of technology reflect the inscribed structures, and relating these to expected outcomes" [93]. Appropriation is a powerful framework that helps us understand the role of technology in shaping organizations as well as individual practices.

*Technology as (Cultural) Practice*

I found the technology-and-practice framing and corresponding studies immensely helpful in making sense of how technology is used and what these patterns of usage say about the embodied value-structures in technology—readers will see this influence on Chapter 3. However, as I engaged further with the South, traveled more into fields of rural South, and started making technology artifacts with Southern movements, I started seeing the limitation in that framing alone. This leads to the theoretical framings that helped me unpack and answer my second research question: *What does it mean to design for the culture of grassroots movement organizing?*

Recent work in Critical Informatics points out that a depoliticized application [95] of sociotechnical systems theory can sometimes overlook the "cultural mediation of design, use, and meaning of ICTs" [96, p. 1]. They call for an application and understanding of sociotechnical systems that "positions culture and subject as interrelated, and thus demands an interrogation of technology as culture/ideology" (p. 2). For the context of this dissertation—grassroots social movements led by BIPOC in the U.S. South—this view of culture becomes indispensable. In experiencing grassroots beliefs, rituals, and practices in the U.S. South, we found that participants' primary way of relating to the work of the movement and to one another is through shared cultural values. These cultural values are not bound by topological boundaries or normative structures [97]. For instance, SMA, which has a majority of working-class African Americans would identify with the culture of blackness more than they would identify with the idea of a standard "American society" [98]. Given this, I recognized that I needed to be careful with framing the grassroots context as merely sociotechnical especially since various scholars argue many qualitative analyses normalize a White Western cultural ICT context as the "social," while other cultural ICT usages are lost in that generalization [99, 100, 65, 86].

To uncover and interpret the cultural tensions in SMA's relationship with ICTs, I turned to the field of Critical Informatics—a turn that will go on to solidify my understanding of *technology as practice*. Toward framing technology as practice, and especially as a cultural practice, I will discuss two important theoretical threads: technocultural theory [101] and technology as enactment of structures [102, 103].

### *Technocultural Theory*

A valuable theoretical framing Critical Informatics draws from is *technocultural theory* [101]. Technocultural theory, as formulated by Arnold Pacey, builds on the notion of sociotechnical systems, with an emphasis on *technology as not just a societal phenomenon but also a cultural one*. As with sociotechnical systems theory, technocultural theory sharply criticizes technologically deterministic and instrumentalist views in which modern technology is seen as something separate from society's character [101, 104]. Engaging with the social constructivist [75] approach of understanding how society is changed via technology, the theory of technoculture exercises a steady focus on interrogating the design of the technology itself, asking *why* certain technologies lead to inequitable outcomes for certain cultures within a society.

Technocultural theory suggests looking at elements such as social and economic beliefs leading up to the design and production of technology, values with which technology gets marketed, and ultimately, how the means of technology design and production shape the social, cultural, and political consequences of an artifact. This suggests that technology cannot be understood without understanding the cultural conditions driving the production of that technology.

The technocultural theory further argues that ambiguity around the meaning of technology often leads it to be perceived as a neutral entity that only "experts" know how to operate. As an alternative, it offers us the lens of *technology practice* which lets us see that technology is nothing without the practices around it—therefore the argument about its neutrality is inherently flawed. Further, we see that seemingly neutral artifacts are also products of the practices and beliefs held by their makers and marketers. Within this framing, technology practice is "the application of

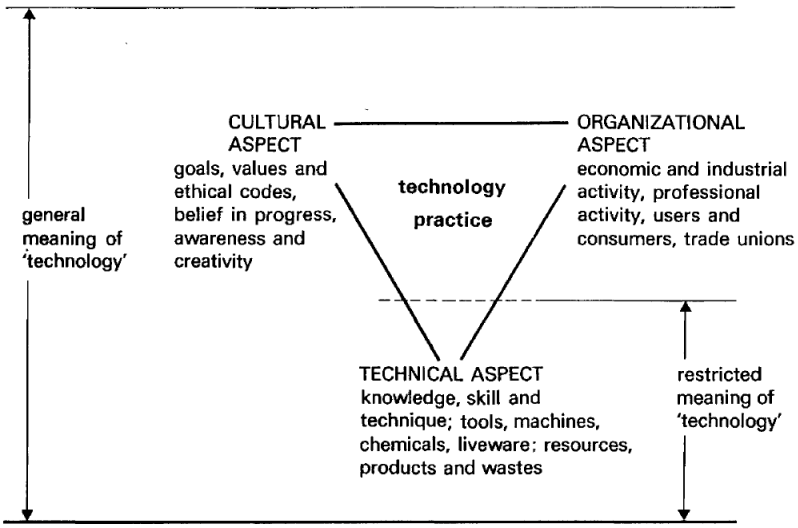



Figure 2.1: Diagrammatic representation of culture of technology, as conceptualized by Pacey [101]. While technology in the popular meaning is often restricted to tools and machines that require expert skills and knowledge for their operation, Pacey urges us to look beyond this restricted view and understand technologies as cultural phenomena. Understanding technology in such totality entails critically engaging with its cultural and organizational aspects (with an emphasis on its means of production and design) along with the technical.

scientific and other knowledge to practical tasks by ordered systems that involve people and organizations, living things and machines" [101]. This translates to a triad of cultural, organizational (economic and industrial activity, professional activity, users and consumers, trade unions), as well as technical (knowledge, skill, and technique; tools, machines, chemicals, liveware; resources, products, and wastes) aspects of a technology-practice (Fig. 2.1).

Further, we see that many users (especially users who belong to non-expert classes) do not share the same values as that of technology (values that primarily represent the expert culture). However, due to the immense power technology holds over people it has the ability to distort the organic cultures of its users. As a way of resolving the fundamental conflict of cultural values between "experts" and "users," technocultural theory calls for a "cultural revolution [101, p. 160]" in technology against this—rooted in user values that will reform technology's dominant culture set by experts. Our intention with this paper is to contribute to this idea of the cultural revolution: by first understanding the culture of SMA (grassroots "users"), followed by an understanding of the expert culture of ICTs, and finally with a formulation of countercultural ICT-practice

rooted in grassroots values. Recent work in Critical Informatics has extended Pacey's formulation of technology practice as a triad of social/organizational, cultural, and technical components [86]. Brock points out Pacey's lack of consideration of ideologies in the making of technical artifacts, and further urges us to question the gendered and racialized character of technocultural ideology. He particularly notes how the beliefs and practices about the appropriate use of technology reproduce "the existing relations of production" [105]. Extending Pacey, Brock reformulates technocultural theory to examine technology with three categories: *artifacts, practices, and beliefs* [86]. Ideologies—those of the makers and marketers of ICTs as well as of the users of ICTs—are taken into consideration in each component of this formulation.

### *Technology as Enactment of Structures*

The enactment perspective of technology—the second theoretical thread in my work—is more application-oriented than technocultural theory itself. Though I see the fundamental concepts in technocultural theory to be entirely in line with the enactment perspective—especially since both advocate for a practice lens of technology.

The enactment perspective is a dialog with the "technology and practice" framing of technology that I discussed previously. The main critique this holds for that body of work is that it assumes that structures become stabilized after the development of technology, and any user engagement with these structures of technology only happens externally. As Orlikowski points out, "they may be less able to account effectively for the changes associated with ongoing organizational use of technologies, particularly the newer and reconfigurable technologies becoming more prevalent in organizations (e.g., groupware, web)" [103]. Orlikowski and other contemporary scholars of practice theory propose an enacted lens of technology to address these gaps in appropriation—by posing technology *as* a practice. Practice theory, the theoretical framing behind the enactment lens, specifically focuses on dynamics, relations, and enactment, thus supporting and augmenting appropriation in important ways [102, 59]. With the practice lens, we can begin to see user actions as an enactment of the structures in technology, thus, "rather than

emphasizing the technology and how actors appropriate its embodied structures, an enacted view emphasized human action and how it enacts emergent structures by interacting with the features at hand" [103]. In this view, the structures in technology are not just embodied and permanent (which they can be), they are also dynamic, subject to change with how they are enacted in practice. The practice view offers more agency to users, centering humans and their actions around technology, in its understanding of emergent structure. User actions around technology is not a matter of obeying a pre-determined structure (as is suggested with the above-mentioned faithfulness analogy in [93]), in this view, "technology becomes technology only when it is used, and this use of technology—technology-in-practice—defines the nature and influence of technology in human affairs" [103]. It also offers us hope. In that, we see while user actions can sometimes become reflections of the values and structures originally inscribed in technology artifacts, they can also be intentionally designed to "circumvent built-in ways of using the technology and invent new ways [103]", to contradict, resist, and reform the built-in structures of the same technologies.

In my work, I have found both points of view—technology structures as embodied and enacted—helpful in explaining the grassroots use of technology. The first lens of examining embodied structures in technology let us see how grassroots use of technology often showed "reproduction of cultural values of the chosen ICT artifacts [5]"—thus leading to inequitable consequences for more marginalized members of the community. I describe this analysis at length in Chapter 3, while in 4, I try to reconcile with this truth with the help of the technology-as-practice lens.

Ultimately, in this dissertation, I share what it means to intentionally design to resist the built-in structures of ICT artifacts. To do this I follow suggestions from practice theory in intentionally designing a critical technology practice. For example, practice theory challenges the long-standing notion that "the subjective and the objective are independent and antithetical concepts" enabling scholars to theorize "the dynamic constitution of dualities" [59]. In developing a *critical technology practice* grounded in grassroots praxis I, therefore, needed to simultaneously i) collect subjective experiences of movement organizers of the structures of technology, and ii)

design interventions to actively engage members in reflecting on technology's position in the histories and objective realities of Black and Brown people in the U.S. South.

With these theories in mind, I share my first participatory action research work conducted for this dissertation in the next chapter. In Chapter 3, I will draw from the methods and the key theories described in this chapter as I describe my findings and analyses from studying the local grassroots organization of Science for the People-Atlanta.

# CHAPTER 3
# THE ROLE OF SOCIAL COMPUTING TECHNOLOGIES IN GRASSROOTS MOVEMENT BUILDING

## 3.1 Introduction

Lakewood, a neighborhood in the south of Atlanta, has exceptionally poor living conditions. Residents struggle on several fronts, having an average per-household income of $18000/year and lacking the accessibility of fresh produce—a situation commonly defined as a "food desert" [106]. Jasmine, a volunteer activist of Science for the People - Atlanta (SftP-Atlanta) who is also a resident of Lakewood, brought these statistics up in one of the organization's monthly meetings and proposed that SftP-Atlanta should focus their research efforts within the Lakewood community. Members present in that meeting discussed the issue in further detail, and three members of the organization signed up as volunteers interested in being involved in the community. In the months that followed, SftP-Atlanta collaborated with the Lakewood-based organization Georgia Citizen Coalition on Hunger over various offline and online means of collaboration and prepared a detailed report on Lakewood's socio-economic infrastructure. This report further guided their needs analysis with the community, at the end of which, they decided to help build a community-owned and run food co-operative. According to the volunteers from SftP-Atlanta, the goal of this "Urban Garden[1]" project was "not only to make fresh produce accessible but also to create jobs and strengthen the community as a whole."

SftP-Atlanta, the grassroots science-activist organization I partnered with in the first year of my research, is focused on building a movement around a practice of science that is inclusive, participatory, and accessible [2]. They are a group of accredited scientists, researchers, and science enthusiasts who are committed to offering their skills and expertise toward causes of social justice.

[1] https://atlanta.scienceforthepeople.org/index.php/foodcoop/
[2] https://atlanta.scienceforthepeople.org

As a grassroots organization, they focus on the practical needs and requirements of local communities and follow a bottom-up approach of movement building. Toward their organizational goal of mobilizing scientific skills for the causes of people, SftP-Atlanta collaborates with individuals and communities most impacted by social injustice, and further positions these impacted groups as leaders in framing research questions, assigning interpretations and designing meaningful solutions. Their leaderless governance structure strives to allow all members to equally engage in collective action. Movement building for this organization has been a continuous process supported by a set of sociotechnical practices consisting of several social computing technologies, technological knowledge, and skills of members, local norms around these technologies, etc.

Although much had been studied about the role of social computing technologies in rapid movement organizing, there had been less work done on understanding the role of social computing platforms in building up a grassroots movement. In this phase of my research, I conducted action research with SftP-Atlanta from its inception and studied the role of social computing technologies in organizing a grassroots movement from the ground up.

As researchers in the domain of Computer-supported Cooperative Work (CSCW), I recognize that computing technologies are inherently value-laden: values are embodied in and reproduced through how we design, build, and choose to use certain computing technologies [79, 107, 108]. Therefore, I see our responsibilities as twofold: we strive to build systems that not only promote instrumental values such as functional efficiency, safety, reliability, and usability, but also embody substantive social, moral, and political values that societies and people subscribe to. My investigation of the existing sociotechnical practices of SftP-Atlanta reveals that while the social computing technologies they chose to use served some of the instrumental purposes, they often lacked the social, moral, and political alignment with the causes of grassroots organizing. While technologies were chosen with an expectation of being an "efficient" solution to some practical problems, the very choice of certain social computing technologies introduced new power relationships within the organization that were antithetical to the philosophical beliefs of the organization.

As I noted before, with social movement organizing becoming increasingly dependent on social computing technologies (e.g. Facebook[3], Twitter[4], Slack[5], etc.) that were built with commercial values in mind, these conflicts become a default reality of movement building. However, these conflicts come with consequences that are not just ideological but also practical: how can a group democratically decide on issues when the decision-making tool that is supposed to facilitate that process disproportionately favors people who are more comfortable with technology? In this chapter, I provide a way of understanding and working around conflicts that may exist within the sociotechnical ecosystem of grassroots social movements.

This chapter begins on the note of philosophical values that the movement of SftP-Atlanta is founded upon. Members of SftP-Atlanta take a pedagogical approach to their activism. As a group of scientists, researchers, science-workers with little to no background in social movement organizing, members of this organization realized that they needed to read, contextualize, and collectively reflect on different philosophies of social action. They are notably inspired by the philosophy of Brazilian educator and philosopher Paulo Freire. Following their lead, I chose *the Freirean model of participatory communication theory* of social movement organizing [54, 56] to understand their process of movement building. The Freirean model of participatory communication theory offers a clear structure that helps us unpack the iterative steps of social movement organizing [54]. Leveraging that framework, I present an empirical account of both the perceived strengths and weaknesses of their sociotechnical practices in supporting the organization as they iteratively go through the three key phases of *forming a collective identity, facilitating collective action, and fostering reflexive dialog.* My analysis of SftP-Atlanta's sociotechnical practices leads us to identify inclusivity, privacy/security, and social translucence as three essential values of grassroots movement building. Further, I note that there are often tensions among these values: while they are philosophically interdependent, it can be challenging to simultaneously embody them through design. Designing for the values of grassroots organizing will therefore require design-

[3] `http://facebook.com`
[4] `http://twitter.com`
[5] `http://slack.com`

ers to not only keep an eye on each value individually but also understand how they interact or move in relation to one another. This chapter particularly contributes a way for activists to make sense of the philosophical conflicts that may arise in their day-to-day organizing practices. It also provides social computing researchers an understanding of how grassroots social movements encounter such conflicts in their everyday activities.

## 3.2 Empirical Setting: Science for the People, Atlanta

### 3.2.1 Science for the People

Science for the People (SftP) is a U.S.-based organization dedicated to building a social movement around progressive and radical perspectives on science and society. Their organizational goals include [6]:

- Growing an international organization of STEM workers, educators, and activists who work to serve the people—especially in poor, oppressed, and marginalized communities.
- Contributing to social, economic, and environmental justice internationally.
- Seeking new and radical solutions for problems of energy, environment, agriculture, public health, and workplace safety.
- Establishing platforms of communication and educational tools for STEM workers, educators, and activists to develop research, strategies, and tactics to achieve these goals.

There are seven local chapters affiliated with the organization. The local chapters of Science for the People embody the core principles and strive to fulfill the strategic vision of the organization. They are encouraged by the national body to use their own autonomy and ingenuity as they develop and apply bottom-up, grassroots strategies to address local issues. From the year 2016 to 2017, in my research, I partnered with the Atlanta chapter of the Science for the People, to

[6] `https://scienceforthepeople.org`

simultaneously engage in the organization and study their use of social computing technologies in organizing a local movement around science-activism.

### 3.2.2 Science for the People-Atlanta

Rachel had never been a part of any activist organization, but like many others, she identified the 2016 US presidential election as a moment of political crisis. She attended the Women's March in Atlanta in January 2017 [7], and kept wishing that she could do more than just attend protest marches. She wished she could use her skills and experience as a public health worker toward helping people who would need it the most in a time of crisis. And so, when her friend Sam invited her to a potluck dinner he hosted to plan and discuss the possibility of initiating a movement around science activism, she was immediately interested. Later, at that dinner, she realized she was not the only person in the room who felt the urgency of coming together for the causes of social justice. As she shared her reason for choosing to be a part of the movement, she said,

> *"These are difficult times, and I feel miserable and powerless. But I also see this as a time of collective spiritual growth."*

That potluck dinner was the birth of the movement of Science for the People-Atlanta, the grassroots science-activist organization I discuss in this chapter. I was present at that first official gathering of SftP-Atlanta and stayed involved as an active member of the organization through the time of this research, witnessing the birth and formation of a grassroots social movement organization. As I discuss the story of SftP-Atlanta throughout the rest of the chapter, the demographic information of the members I interviewed is described in the table below. To preserve the anonymity of the participants, the names I will be using in this paper are all fictional.

Among the ten members I interviewed, Rachel, Emma, Sam, Natalie, Alex, Chris, and Steven were part of the core member group that formed in January. Emily reported having found out about the organization from their website. Shortly after she signed up to become a member, she was invited to the organization's subsequent face-to-face meeting. Sam and Jasmine connected at

[7] `https://atlantamarch.com`

Table 3.1: List of participants in my interview study with Science for the People-Atlanta

| Participants | Age & Gender | Ethnicity & Nationality | Occupation |
|---|---|---|---|
| Rachel | 33, Female | Caucasian; US | Public Health Analyst |
| Emma | 25, Female | Caucasian; US | High School Science Teacher |
| Sam | 35, Male | Caucasian; Italy | Researcher in Neuroscience |
| Natalie | 30, Female | Caucasian; Spain | Researcher in Data Science |
| Alex | 30, Male | Caucasian; US | Researcher in Cybersecurity |
| Chris | 28, Male | Caucasian; US | Student and IT Consultant |
| Steven | 66, Male | Caucasian; US | Environmental Justice Worker |
| Emily | 37, Female | Caucasian; US | Assistant Professor in Microbiology |
| Jasmine | 27, Female | African-American; US | Student |
| Becky | 26, Male | African-American; US | Software Engineer |

an activist event, and she came on board as a member in May 2017. Becky, an experienced activist and community organizer with ties to several grassroots organizations in Atlanta, was recruited through Emma's personal network.

### 3.2.3 Advocacy of SftP-Atlanta

SftP-Atlanta is built on a local community of scientists, researchers, and science enthusiasts. Like Rachel, they all came together with the shared belief that "scientific reasoning could be an extremely powerful tool to resist injustice [8]." They also identified that activating scientific discourse among the public would not happen without a re-imagination of the practice of science for the causes of social justice. Following the core values of SftP, the local chapter in Atlanta built their identity around a practice of science-activism that is inclusive, participatory, and accessible. Their plan of collective action toward this goal includes both short term and long-term advocacy work (as shown in 3.1 below).

Their short-term collective action includes both taking part in activist events happening in and around Atlanta as well as organizing public-facing events to advocate for their cause of science-activism. For instance, as a part of their short-term advocacy, they organized a film screening of a documentary on climate change. They also collaborated with two other grassroots environmen-

[8] `http://atlanta.scienceforthepeople.org`

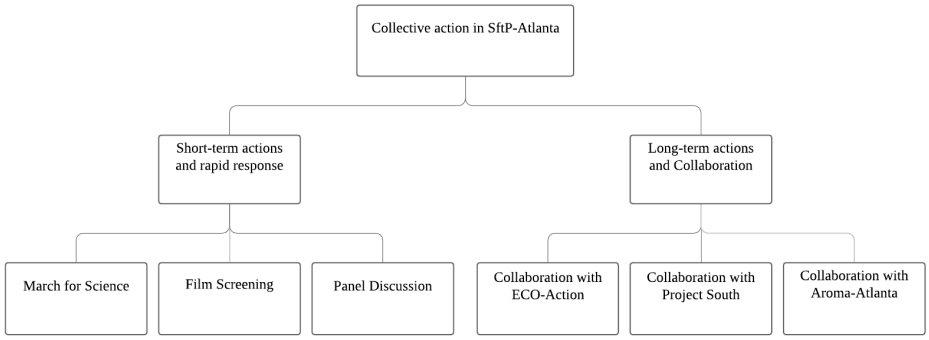



Figure 3.1: Collective action in SftP-Atlanta

tal justice organizations to co-organize a panel discussion at a local university on environmental racism. Their long-term collective action is a step by step process that was informed by methods of community-centered research. It includes: making a connection with a local community organization; establishing a partnership between the organization and SftP-Atlanta; and positioning the partner organization as leaders in shaping research questions, framing interpretations, and designing meaningful research action and outcomes. It is important to note that as a group coming into the local communities, SftP-Atlanta is not looking to take over their struggle [109], but instead provide further resources to the community to better enable them to engage in their own praxis. For instance, in one such partnership, SftP-Atlanta is collaborating with an environmental justice organization called ECO-Action, helping them create a web platform to communicate their research. In this partnership, SftP-Atlanta members trained in web development, data science, and science communication came together to collectively contribute to the shared cause of SftP-Atlanta and the partner organization. The shared cause, in this case, is to make scien-

tific research around environmental injustice accessible to ordinary people, and especially to the communities that are most affected by those injustices.

In another partnership, the organization is collaborating with two local grassroots organizations called Project South and Georgia Collation for Hunger and working to set up a food cooperative in Lakewood, a local neighborhood that is known to be a "food desert" in Atlanta. For that project, three members of SftP-Atlanta are collaborating with members from two different organizations that already have experience working in that neighborhood.

Social movement research has evaluated results of movement organizing with a focus on two main questions: the effects of the movement (a) on its members and (b) on the general social situation [110]. Keeping those markers of evaluation in mind, I observed that SftP-Atlanta, through the time (eleven months) I partnered with them, have recruited about twenty more members, established three community partnerships, and grew and sustained a community of scientist-activists contributing to the social justice initiatives in and around Atlanta.

While face-to-face meetings played a crucial role in establishing the collective identity of SftP-Atlanta, the internal organizing that led to the outcomes of this organization was supported by a collection of social computing tools. Their use of online tools and technologies resembles the way volunteer-run organizations make use of online tools to conduct meaningful collaborations [89]. That said, they also appropriated certain tools in unique and innovative ways for their purpose of movement organizing which makes SftP-Atlanta an interesting case to study.

## 3.3 Participation, Data Collection & Analysis

I joined SftP-Atlanta as a volunteer activist for the organization, learning about the organization through Facebook. Upon establishing a connection with one of the existing members, I was then invited to the first face-to-face meeting (the previously mentioned potluck dinner) with the core members of the organization.

SftP-Atlanta particularly needed help with the development of its web platform. I had some experience with web building and offered to develop the website for the organization. In the

first phase of my action research, I facilitated several participatory design workdays with other members of the organization and subsequently developed the web-platform of SftP-Atlanta with the community. I also maintained and iterated on the design of the website throughout the course of my membership in the organization.

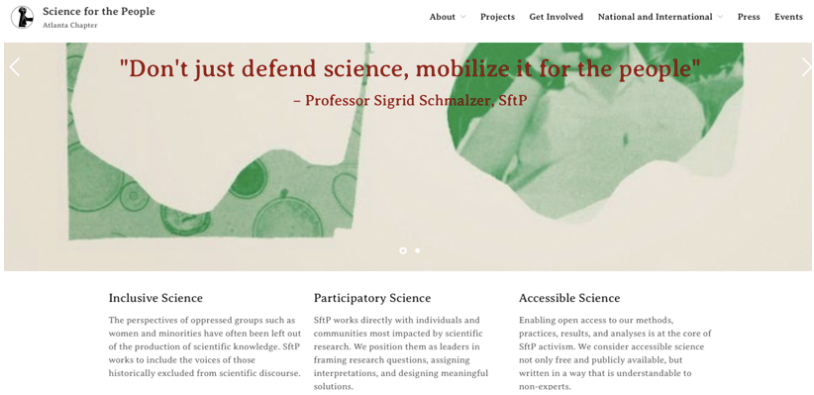



Figure 3.2: Website of SftP-Atlanta

I stayed involved in the organization both as an action researcher and a volunteer activist. During the course of this study, I participated in several organizational activities including around thirty face-to-face meetings. I facilitated around ten of those face-to-face meetings, attended all of their direct-action initiatives (film screenings, seminars, protest marches), and actively contributed her research skills in SftP-Atlanta's collaboration with Eco-Action. Moreover, I became an admin of SftP-Atlanta's Slack channel and Facebook group and used those platforms to communicate with the rest of the community daily. I also took extensive field notes throughout the course of her participation in the organization.

While the field notes from my participation in the organization worked as an important resource, I also performed semi-structured interviews with ten active members of SftP-Atlanta who were also the users of the tools used by the organization. The participants of our interview study were all active in SftP-Atlanta with various degrees of involvement with organizational activities. They represent a spectrum of identities: some of our participants reported to have strong activist backgrounds, while some identified more as community organizers. We had three participants who were participating in social actions for the first time with SftP-Atlanta. They subscribed to

the organization as a reaction to the 2016 presidential election of the United States [9].

My main method of recruitment for the interviews was my relationships in the organization. The participants consisted of five females and five males, between the ages of twenty-five to sixty-four. The semi-structured interviews contained questions regarding the following topics: motivation for joining SftP-Atlanta, individual roles in the organization, tool use, organizational workflows, etc. My goal was at this stage was to gain a better understanding of how SftP-Atlanta members interact with tools, workflows, and each other in the organization.

After transcribing the interviews, I qualitatively analyzed the interview data and field notes using inductive and deductive approaches. I open-coded the interviews and conducted a thematic analysis based on the theoretical framework and emergent themes grounded in the interview data. I also identified the themes based on interest to the CSCW and CHI community.

## 3.4 The Sociotechnical Experiences of Building a Grassroots Social Movement

Grassroots movements have spontaneous growth; however, the interviews I conducted with SftP-Atlanta members suggest that such organizing requires intense planning and collaboration among all members. In SftP-Atlanta this collaborative process is supported by a combination of social and technological networks. Toward answering the research question of understanding the role of social computing technologies in grassroots movement building, first, I will describe the sociotechnical ecosystem that supports the movement of SftP-Atlanta. With this description, I mean to build a narrative on how the sociotechnical practices were constructed in the first place: the choices and decisions around the tools, who chose the tools, and what drove them to make the choices they made. Next, I will analyze the role of this ecosystem in the process of their movement-building in the light of Paulo Freire's model of participatory communication theory [54]. My analysis of SftP-Atlanta's sociotechnical practices is informed by both my participation in the organization, and the interview study I conducted with the members of the organization. My analysis reveals both strengths and weaknesses of the ecosystem in supporting grassroots

[9] https://en.wikipedia.org/wiki/2016_United_States_presidential_election

movement building. Finally, my analysis of each step leads us to identify three core values that can guide the future design of sociotechnical systems aiming to support grassroots movement building.

### 3.4.1 A Description of the Sociotechnical Ecosystem of SftP-Atlanta

SftP-Atlanta's sociotechnical ecosystem is not monolithic, it is a combination of several online platforms (Google Tools, Slack, Facebook, the web platform), bi-weekly meetings, volunteer activists, and local rules. These elements, in turn, shaped their practices of movement building. Sociotechnical system studies define the human organization as an integration of two heterogeneous but mutually supportive systems: a social system in which members form relationships through activities and a technical system that they use to perform a series of tasks related to specific goals. These two systems are interdependent, and greater coordination between the two leads to higher productivity in the organization [111]. Grassroots social movements, too, consist of social and technical systems: a social system made of volunteer activists collaboratively working toward their collective mission, and technical systems that foster collaboration in the social system. Together, this ecosystem shapes the sociotechnical practices of grassroots movement building. Optimized integration between these two systems leads to more effective practices which will then lead to more participation from the members.

The social system of SftP-Atlanta evolved with time. As I mentioned before, the potluck dinner in January 2017 marks the official inception of the organization. In the first potluck dinner organized by three core members, all participants were handed a questionnaire with six questions:

> *"What's your educational and occupational background?*
> *How did you hear about SftP?*
> *What interests you about the organization?*
> *What's your experience in organizing?*
> *Are you a part of any labor, environmental, or other activist organizations?*
> *Do you know other people who would be interested in getting involved with organizing*

*SftP?"*

A core group of ten members was formed after that meeting. They met weekly for the next two months to frame a collective identity and a vision for the organization. These members were also simultaneously leveraging their social ties to recruit more people in the organization. In the first two months, the core group members of SftP-Atlanta engaged in readings on themes including but not limited to grassroots politics, participatory democracy [35], pedagogy of social action [54], feminist epistemologies [109], and so on. The group would also engage in analyses of the local political landscape of Atlanta. This led to the creation of their core principles by the end of January

The core group members also chose the technical system of SftP-Atlanta. These tools were chosen over the course of the first three months since their first meeting in January 2017. In that potluck dinner, participants also discussed the technologies they could use to continue the work of building up the movement. While several participants expressed their concerns with using commercial platforms like Google and Facebook, they were also quick to identify that at the initial stage of building and sustaining a movement they should prioritize usability over the politics of the platforms. At the end of the potluck dinner, the core members decided to create a Google account, a drive folder[10] from that account, and finally a document in the drive to collect and synthesize the skillsets of the members. We elaborate on the role of Google Drive in framing a collective identity in the coming sections of this paper.

While Google Drive worked as a repository for organizational data, the web platform of SftP-Atlanta along with the Facebook account were created to establish the organization's identity to the broader public. Using Facebook was another decision where the members felt conflicted, but also recognized that a social media presence was necessary to establish a strong public presence. Emma (a participant in this study) set up the Facebook page of the organization. Although the admin privileges were shared among a few of the core members, Emma took up the primary responsibility of managing the page.

[10] `https://www.google.com/drive/`

As the technical and social systems started to grow, members started to realize a need for more effective asynchronous coordination between the social and technical systems. During a face-to-face meeting in February 2017, Alex (a participant in this study) shared the idea of creating a Slack channel for the group. Slack is a proprietary team collaboration tool. Alex had already been using Slack for work and had found it to be effective for asynchronous communication. In his interview with us, Alex reflected that as a hacker he was an avid user of Internet Relay Chat (IRC) platforms, and he saw Slack as a more user-friendly version of IRCs.

> *"I like Slack a lot. It is nice because using IRC has a bit of a learning curve, and it was just kind of like a beardy hacker kind of thing, and Slack is made that style of communication a lot more accessible" –Alex*

When Alex shared his idea to a meeting with eleven participants, four of them said they had a similarly positive experience with it, two of them shared that they have Slack accounts but are not actively using the tool, five of them had no prior experience with the tool. Some of the members also suggested that the group should look for open source alternatives that are customizable, as an activist group like theirs might have needs that a commercial team collaboration tool might not accommodate. While Sam, Alex, and Natalie took up the task of doing more research on open source alternatives, the group decided that they would create and use a Slack channel until an alternative was found. The members with prior experience with Slack offered to help others with less or no experience with the tool. Here it is important to note that later when open-source alternatives were found, members (primarily the ones who had to learn Slack for this organization) showed very little enthusiasm to learn yet another tool. When asked how she felt about the proposed transition to a new tool, one of our participant shared,

> *"Slack was hard enough for me. I am not on these platforms like others, I am not a techie, I don't think I can manage yet another tool." –Rachel*

This reluctance (shown by some members) to accept "yet another" tool to the technical system of the organization inspired the group to look for technological affordances within the Slack

universe instead of adding a new tool to the ecosystem. Their choice of the to-do bot of Slack is an example of such a usability-driven choice. Three months into organizing their movement, SftP-Atlanta started to work on concrete projects. The group started to realize that they needed a task-management tool to increase accountability in their social system. Addressing this concern, Sam suggested the to-do bot of Slack as a way of managing and distributing tasks to members. The to-do bot is a project management application integrated with Slack. The group was quick to adapt to a choice that was merely an extension of a technical system (Slack) that they were already using.

The technical system of SftP-Atlanta was established in the first three to four months of movement building, while the social system continued to evolve as the organization continued to grow both in terms of membership and projects they were involved in. To the newer members who joined after the first four months, the technical system was presented as a given fact about the organizational ecosystem. However, the social roles associated with the tools were transferred to newer members. For instance, Jasmine joined SftP-Atlanta in March 2017, and after joining a few of their face-to-face meetings she showed interest in helping with the Facebook account. She was promptly made an admin of the Facebook page by Emma.

Not all transitions were as seamless as it was with Jasmine's role as the Facebook admin. SftP-Atlanta's social system was built upon the foundations of grassroots democracy. The technical systems that SftP-Atlanta chose to use were, as was pointed out by the core members themselves, all commercial platforms with values often in conflict with grassroots politics. As a result, the social and technical systems of SftP-Atlanta were not always integrated most optimally. The sociotechnical practices of SftP-Atlanta, in turn, were not always successful in supporting the grassroots process of movement building.

To better understand this conflict between the social and the technical systems of the organization, I needed to examine SftP-Atlanta's sociotechnical practices in the light of their own politics. In the following sections, I will analyze both the strengths and the weaknesses of these sociotechnical practices in supporting the iterative steps of grassroots movement building.

### 3.4.2 Examining the Sociotechnical Practices of Grassroots Movement Building

SftP-Atlanta is founded upon the values embedded in grassroots organizing. They are dedicated to building a movement around science activism from the ground up with a goal of producing local impact. Toward their goal of establishing a solid political foundation, they organized several reading groups. From my field observations and the interviews with the ten members of SftP-Atlanta, I observed three primary goals that guided them through their process of internal organizing: building their organizational capacity and expanding their relational networks, mobilizing their members toward collective action, and fostering meaningful engagement among the members.

Several organizational activities were planned and executed to collectively accomplish these goals. As I was studying and experiencing these activities as part of the organization, I wanted to make sense of these goals and activities in the light of a philosophy that SftP-Atlanta subscribes to. For that purpose, I will now turn to the Freirean model of participatory communication theory. My observations of their goals and activities reveal that SftP-Atlanta followed the three iterative steps of grassroots movement building that the theory of participatory communication also suggests: *building a collective identity, facilitating collective action, and fostering reflexive dialog*. I further analyze the sociotechnical ecosystem as a means for operationalizing this process of movement building. My analysis of the ecosystem indicates both strengths and weaknesses of the sociotechnical practices in supporting the unique qualities of bottom-up movement building. I further analyze their strengths and weaknesses and identify values that emerge from their practices of movement building.

*Building a Collective Identity*

All the core members we interviewed identified the potluck dinner gathering of January 2017, as the birth of the movement of SftP-Atlanta. As one of the members noted in that meeting,

> *"To plan our actions in and around Atlanta, we have to first realize who we are as a*

*community." –Rachel*

From that informal gathering to a grassroots science-activist organization, an essential part of SftP-Atlanta's journey was to collectively explore and establish their identity as an organization, that is, who they were as a community. Reflecting on the organizational goal one of our participant noted,

> *"I see the goal of our organization is to push for a type of scientific inquiry the ultimate goal of which is to make the world better for all people" –Emma*

Although there was a shared cause that initiated the process of organizing for SftP-Atlanta, constructing the goals and the guiding principles that framed the collective identity of the organization required more nuanced interventions. As a first step toward forming an identity, the theory of participatory communication stresses the importance of careful analysis of the social and political context in which a movement is being organized. This implies a critical understanding of the broader structural issues that might be influencing the cause of the movement, the power relationships that shape the cause, and a collective consensus on how the movement should be addressing the issues it is dealing with. Members reflected on how the sociotechnical ecosystem of the organization played a crucial role in this phase of movement building.

| **Building a Collective Identity** | |
|---|---|
| **Goals** | • Recruiting members<br>• Developing a shared mission<br>• Developing partnerships |
| **Activities** | • Collaborative writing of the mission document<br>• Creating web platform for advocacy and recruitment purposes<br>• Communicating the agenda of the organization to the broader public with social media |

Figure 3.3: Goals and activities toward collective identity

**Perceived Strengths of Current Practices for Building a Collective Identity** Since there was no hierarchical structure leading the movement, the collective identity of SftP-Atlanta was formed through several collaborative work sessions (both offline and online) among the core members of the organization. The focus of those collaborations was to deconstruct the "ultimate goal" into two concrete actions: recording and analyzing the scientific skills and political interests of each member and developing a set of guiding principles that would direct their organizational activities.

For the first task, all core members were asked to communicate their research and political background in three to four sentences on a shared document in SftP-Atlanta's Google Drive. Two of the members with expertise in community organizing then volunteered to synthesize the document and further draft a few guiding principles where the individual voices of the members were chronicled. The google document containing the guiding principles was then iterated in the network of the core members to reach a consensus on those principles. The result of this internal analysis was a more refined framing of the movement of SftP-Atlanta. As one of the participants explained, it also identified new requirements in the organizational agenda,

> *"We realized that it's important for Science for the People to be a resource to the people. But to serve the people as resources, we need to know what questions they have or what's going on in the communities that need to be answered. That document was our way of collectively exploring the question: do we have the resources to help in answering those questions people might have for us?" –Emma*

Once there was a shared understanding of the organizational identity among the core members, the next priority for SftP-Atlanta was to establish connections with local communities to work with and to grow its organizational capacity by recruiting new members. The collective identity of the organization, as crafted through democratic collaboration, further influenced the framing of the organization's advocacy strategies as well as the recruitment

policies. For SftP-Atlanta, the purpose of advocacy was twofold: (a) to find and recruit potential members, (b) to build a network of allies who would be willing to partner with the organization. Social media, and particularly Facebook, was the tool the organization used for this purpose. Although some of the members were initially wary of Facebook's policies and were personally absent from the platform, the group collectively voted on having a social media presence. One of the participants who volunteered to manage the social media presence of the organization explained,

> *"I see the use of Facebook in getting the word out. Reposting, retweeting, making sure the subjects of concern are present in the communication sphere. We could reach the big audience that we could not have reached by any other means before." –Jasmine*

Participants also noted that having a presence in the landscape of social media, because of its broad reach, made the members feel less alone. The virtual support system (a network of allies) played a vital role in situating the work of the organization in the broader grassroots network.

> *"I can see how it makes us feel less isolated as we do the work, because social justice work can be very exhausting, and people get burnt out." –Jasmine*

While the Facebook page of SftP-Atlanta served the purpose of raising general awareness about the issues the organization's identity is tied to, the public page was rarely used to directly recruit members from the Facebook world. Recruitment in a social movement organization requires a more nuanced approach than what the Facebook page could afford. The members soon realized a need for a different tool for this process, which led me to co-create a sign-up feature on their web platform. Recruitment in SftP-Atlanta is a two-way process: while some members reported initiating a connection with the organization via their web platform and were later recruited by an existing member, the core members I interviewed also reported having approached potential members through various networks.

Participants found the sign-up feature on the web platform to be more useful in the first scenario. The second scenario required more human intervention. An active recruiter in the organization reported its strategy,

> *"Sometimes I just point them to our website, or I give them my email address or my phone number when they seem to be interested. When you talk to people you sense it, how much they are interested. Then depending on that, I either give them my contact if it's a really strong interest that I see. If it's not that strong, I just point them to our webpage so that they can explore and decide for themselves." –Sam*

Participants further reflected on how recruiting individuals and advocating for a cause one is personally and politically invested in, can be an emotional exercise.

> *"If you expose yourself too much to people who are sort of, you know, not so invested in the idea...and they don't follow up, it sometimes consumes you. You invest and there is nothing coming back, which is where you must be patient. Because you can never avoid that." –Sam "Science for the People is always at the front of my mind. I'm always thinking about it. Even if I'm not messaging in the Slack group or something I'm talking to my coworkers, I'm talking to my bosses, I'm talking to this person that I met at a coffee shop in Detroit about it. It's at the forefront of my mind all the time because I think it's so important that it exists." –Emma*

Although both agreed that the emotional component of advocacy is irreplaceable, they also noted that the web platform helped in streamlining this process of recruitment. One of the recruiters of the organization personally (over email) reached out to everyone who would sign up as a volunteer activist through that feature on the website. The objective of this step was to establish a stronger connection with potential members and depending on the conversation they would get invited to the monthly meetings or the Slack channel.

Recruitment in SftP-Atlanta was not only about acquiring new volunteers; the organization was also focused on building partnerships with other community organizations. They

intended to make this process of partnership formation a two-way process like that of the member recruitment, which led the organization to include a sign-up feature on their web platform for community partners as well. However, members reflected on how complex this process of network formation is. SftP-Atlanta established three community partnerships in the course of my work with them, and in each of these three cases, participants reported following strategies that were more human-driven than tool-driven. As one of the participants elaborated, in three of these partnerships, one or more members of SftP-Atlanta would attend meetings of the organization, and similarly, the other organization would also have representatives in the monthly meetings of SftP-Atlanta. It is through this process of relationship building that mutual trust is formed and that leads to a stronger partnership between two organizations.

> *"So far, it's been by two or more individuals from each organization bonding, and then you show up at their events, they show up at your events. Everybody gets a feeling of how the organization functions. I think that's very important for the type of organization that we are. Which is to say, a grassroots organization. You want to know how the other organization works in its core, the surface is not enough, because you need to share core values to collaborate." –Sam*

**Perceived Weaknesses of Current Practices for Building a Collective Identity** While the existing sociotechnical practices functionally supported the organization in their phase of identity formation, the choice of this ecosystem came with its limitations. In my observations of the face-to-face meetings of the organization, I realized that different members of the organization, depending on their level of familiarity with the tools (or with technology in general), interacted with the tools in different ways. While differences in experiences while interacting with the same tool is not unexpected in a diverse community, it can sometimes end up having consequences. As one member reflected on his introduction to the Slack channel,

> *"I felt a little lost in the conversations in the beginning. If you're just jumping into it, you don't know what's happening and you don't know all the conversations, you don't even know how to use the tools, there is a lot to it. I really wish there was like some sort of introduction or something of some kind, an on-boarding experience or something, either by the organization or the tool." –Becky*

It is crucial for a grassroots movement organization running strictly on a volunteer capacity with no practiced hierarchy to be able to successfully tie new members into the existing web of volunteers and provide them with a sense of community. One of my research participants was also concerned about how this barrier to entry in the organization's sociotechnical environment might accidentally result in the loss of representative voices.

> *"I think that it ends up favoring people who are already using Slack for their jobs so they're on it all day versus people who only use Slack for Science for the People. They end up not necessarily participating in the conversations as much or being represented in the conversation as much." –Emma*

Drawing on the participatory communication theory of movement building and its emphasis on the importance of democratic participation, I argue that it is a responsibility for both the designers of the systems and the facilitators of those environments to ensure that technologically disadvantaged voices also get represented. Furthermore, reflecting on the way SftP-Atlanta's sociotechnical ecosystem formed, it can be seen that these technologies were chosen by only a few of the core members, and were expected to be used by all who become members of the organization. This expectation assumes a certain level of technical competence that might not always be the case for everyone interested in the organization.

My analysis of the perceived strengths and the weaknesses of the sociotechnical practices of SftP-Atlanta in this phase of collective identity indicates a conflict between the social and technical systems at work. While on one hand, the organization wanted to stay true to the democratic values of grassroots organizing, on the other hand, it often struggled to mean-

ingfully include all members in the sociotechnical ecosystem for it to be a fair and equitable democracy. Reflecting on this conflicted relationship between the social and technical systems, I identify a key value of grassroots movement building as: *inclusivity*.

*Moving toward Collective Action*

The identity of an organization is also tied to the actions it participates in. Freire suggests that collective action in social movement organizations be informed by the shared understanding of the organization's identity. According to Freire, "the interrelation of the awareness of aim and of process is the basis for planning action, which implies methods, objectives, and value options" [54]. Building off of Freire's ideology of praxis, participatory communication theory suggests collective action as the second step of movement building. While the sociotechnical practices in place helped in mobilizing the members toward direct action, our participants also reported how their values were often in conflict with their own technological infrastructure.

| Moving toward Collective Action | |
|---|---|
| **Goals** | • Choose specific collective action strategies<br>• Execute collective action |
| **Activities** | • Democratic decision-making<br>• Task management |

Figure 3.4: Goals and activities toward collective identity

**Perceived Strengths of Current Practices for Supporting Collective Action** For SftP-Atlanta, the two key activities that facilitated collective action were democratic decision making and proper task management. Collaborative decision-making is essential in democratic environments. Whether it was about taking part in a campaign or starting a new project, for the first few months since inception, any crucial decision that would require participation from the members of the organization was always decided collaboratively by making use

of both online (Slack) and offline (face-to-face monthly meetings) communication infrastructure. Interestingly, the strategies they used on Slack were a virtual equivalent of their offline strategy for decision making at this stage. The facilitator of the decision-making process would post the issue and ask for votes using three different emoji: thumbs up if one agreed, thumbs down if one disagreed, and a neutral face if one was agnostic about the issue. Additionally, the post would urge members to add the reasoning behind their votes as a comment on the post thread. One of our participants who identified as more of a community organizer in the organization explained how Slack was useful for her work within the organization,

> *"I can see how decisions are being made, who was making those decisions, who was being the initiator or the campaigner role, or whatever. I think it's useful to have all that stuff visually displayed and it's easy for me in my mind since so much of organizing is just understanding the social landscape that the organization is operating in. I think that ends up being extremely helpful." – Emma*

Social movement theory stresses the importance of having regular internal meetings in grassroots movement organizing, as it helps create safe spaces for the members of the organization. Members of SftP-Atlanta realized the significance of a safe space for complex decision-making processes to take place. As one member reflected,

> *"We need to create a space where every member feels as comfortable while disagreeing with a decision as they feel while agreeing with it." –Emily*

While monthly meetings did help foster that trust, the channel on Slack which had a presence of all forty members accelerated the development of trust. Appropriating the affordances of the existing Slack channel to democratic decision making was also to foster this sense of comfort and safety in the process.

Deciding on an action was usually followed by decomposing the idea of action into tangible tasks that members can then volunteer to take up. Grassroots movements run by

volunteer activists require a robust infrastructure for task distribution and management. In the case of SftP-Atlanta, this was also mediated through a sociotechnical system that revolved around the to-do bot plugin on Slack. The job responsibilities in the organization were distributed in two ways: either individuals took up tasks during the monthly meetings, or the two members who identified themselves as community organizers would approach certain members with tasks. The second method needed community organizers to be aware of the skills and interests of every member. After that initial exchange of task details, which happened either face-to-face or over chat on Slack, the tasks were then formally assigned to the members with the help of the to-do plugin on Slack. SftP-Atlanta operated in a strictly non-hierarchical manner, and so at the core of their internal process is even distribution of labor among the volunteers. In practice, this was done by switching roles often. Our participants found the process of organizing tasks and setting up deadlines for the deliverable to be useful in keeping them motivated.

> *"I checked off my little 'completed' for my to-do bot the other day. On the day it was due. I was so proud. Social movement organizing can sometimes get stuck at discourses around nebulous ideas and you can feel lost in ideas sometimes, but checking off an actual task has been an emotionally satisfying experience. It also reminds me that I am playing a part in the big action" –Emily*

**Perceived Weaknesses of Current Practices for Supporting Collective Action** Participants of my research reported varying levels of trust in the systems they were using. The definition of trust, however, was different for different individuals. One of our participants reported, the closed source, "secretive" nature of the applications they were using made him question the tools frequently,

> *"I am almost always very, very aware of what I am sharing there. We don't have any activities that could be perceived as subversive. There is no counter-power action. The thing is we are innocuous. Which is good. But, yeah, you never know.*

*We don't have any control whatsoever over these tools. We don't even clearly know how these things work. They don't tell you how secure Slack communication is. But I encrypt my emails." –Sam*

Another participant reported concerns about the privacy policies of Facebook events, and how that impacts the privacy of both the organization and the individuals associated with it. More specifically, he was worried that his attendance at a Facebook event (if the event was public) was by default public to his friends on Facebook. He shared that as an activist and a social justice worker he might be interested in participating in an event that he would not want to make everyone aware of.

*"What worries me most is when you create a Facebook event, it is public by default. And if you don't know better, most of the time it's public, and when it's public, and the fact I'm going to it, is being broadcasted to everyone I am friends with on Facebook. Sometimes, the information even travels outside of Facebook. I've had events that I went to that I was like, "oh maybe I don't want everyone on the internet knowing I'm going to this." –Becky*

Although almost all participants had a critical stance toward some of the politics (or sometimes the lack of a careful political stance) inherent in the systems in use, they also reflected on how they collectively chose to still be present in those communication spheres because of the power and reach those systems have already achieved. For instance, Becky also admitted that Facebook event was one of the most popular ways of organizing an activist event because it could easily draw the attention of many people who were already on the platform.

*"If you want to work with the people, you cannot not be on Facebook. Because that's where the people are." –Jasmine*

Jasmine further reflected on how the organization was leveraging the knowledge and the

expertise of the cybersecurity researchers present in the group to educate each other about the issues of privacy and security in political organizing. Sam, one of the lead organizers in the movement, offered more context to this initiative,

> *"What I think is a useful thing that we do in our organization, is educating each other on these issues of security and on alternative tools that we can use on an individual level. And we have experts in our team on cybersecurity! Looking at the current state of affairs and the work that we do, I really don't think the paranoia is immediately necessary. But things might change. And if it does we have the possibilities in our reach, it will not be too much of a trouble to adapt the new tools I feel." –Sam*

Another participant who self-identified as a "non-expert" of technology, reflected on how these conversations have influenced her interactions with the tools she had been using as a part of the group as well as in her personal life,

> *"I can see in the SftP group, being with people that are much more adept at technology, I started to feel that there's going to be such a huge divide. And the people who really understand this technology are going to be so powerful and the rest of us are just going to be like, "what do we do?" Because there is so much power in technology and all these tools and it's so hard, unless you're in that industry, to keep up with the speed at which it's changing." –Rachel*

Almost all the systems participants reflected on were not developed with a special intention to support social justice organizing. However, going back to the central tenet of our theoretical framework—the notion of democratic participation—it is only viable when the members of the sociotechnical ecosystem trust the platforms that are meant to enable democracy. Furthermore, the findings suggest that people might have different levels of comfort with technologies in use—knowledge and/or accessibility, in relation to technology, also plays a role in making people feel more or less secure in a platform. For instance,

Rachel's reflection on the more "technical" internal discussions on privacy/security practices within the organization indicates that while she gained theoretical knowledge of the privacy practices of these systems in use, she felt a little lost realizing that without adequate skills she was at more risk in such technological platforms.

Previous social computing researchers have investigated the relationship between trust and privacy/security of systems [112, 70]. From my investigation in SftP-Atlanta's sociotechnical ecosystem, I realize that the issues of security, privacy, trust, knowledge, and accessibility were all the more significant because of their purpose of movement organizing. I argue that for there to be successful collective action through democratic participation, members need to feel secure enough to participate in the platforms used by a grassroots organization—privacy/security is a key value that sociotechnical practices of grassroots movement building can embody in order to effectively support meaningful collective action. Furthermore, for grassroots social movement organizations that may host people with varying levels of competence in technology, sociotechnical practices around privacy/security would mean both choosing tools that functionally support their need for a trustworthy platform as well as investing time in collectively developing knowledge and skill of privacy practices.

*Constructing an Infrastructure for Reflexive Dialog*

The third and the iterative step in grassroots movement organizing is building and sustaining an infrastructure that supports reflexive dialog in the organization. The concept of reflexive dialog in participatory communication theory emerges from Freire's dialogical pedagogy. For Freire, liberating pedagogy speaks of the fundamental need of a person to inquire and question existing structures [54, 33]. In the case of SftP-Atlanta, constructing an ecosystem where free transactions of ideas and inquires can take place was a crucial step toward fostering democratic participation.

**Perceived Strengths of Current Practices for fostering Reflexive Dialog** For SftP-Atlanta, the nature of reflexive dialog within the organization changed over time. As a newly formed

| Reflexive Dialog | |
|---|---|
| **Goals** | • Reflect on organizational strategies |
| **Activities** | • Consensus-based decision making<br>• Asynchronous and synchronous communication |

Figure 3.5: Goals and activities toward collective identity

organization still in the phase of deciding on their collective identity, for the first few months since January 2017, members would collectively reflect on what it meant to build a grass-roots movement around science activism. As scientists, researchers, and science workers involved in different local institutions, SftP-Atlanta members engaged in a critical evaluation of the traditional modes of scientific inquiry. For instance, making science useful for the political causes of social justice is often perceived as an antithesis to the value-neutral position of traditional modes of knowledge production [113]. Given their academic background and training in traditional scientific inquiries, SftP-Atlanta dedicated many face-to-face meetings in the first few months in critically reflecting on what their role should be as "scientists" in local communities. My field notes from my participation in these meetings suggest that the outcomes from these reflexive practices ranged from pedagogical (i.e. more awareness in members on how to develop a more community-centered practice of scientific inquiry) to instrumental (i.e. a set of guiding principles that were later published in SftP-Atlanta's web platform).

While these conversations continued within the organization more informally, as the organization took shape, the monthly face-to-face meetings became more systematic. Typically, a monthly meeting would have introductions of new members (if there were any), followed by discussions of updates from various projects, and careful reflections on existing practices and strategies in place. The transition to a more systematic design of monthly

meetings was a conscious decision made by the organization after realizing that members from less-advantaged backgrounds working multiple jobs could not always afford the luxury of semi-structured conversational meetings [35]. At this stage, they prioritized the need of keeping all members updated with the progress of different projects and creating ways of holding each other accountable for the practical tasks they were responsible for.

For instance, in one such face-to-face meeting in April 2017, members involved in the Lakewood project reported back to the entire group on their latest development on a potential funding source for the community garden. The group discussed the potential benefits and drawbacks of writing a grant application for that particular funding source. The members involved also shared concerns regarding their lack of experience in writing grant proposals for an agricultural initiative. As a response to that concern, Emily, who was not involved in the project before but had grant writing experience from her professional background, offered to help with the grant writing process if required.

While the monthly face-to-face meetings became more about reporting back from different projects, SftP-Atlanta turned to Slack to discuss readings on science and politics, and their movement strategies informed by their interpretations of these readings. Members of SftP-Atlanta considered Slack to be an effective platform that met their need for a medium for asynchronous communication.

> *"What Slack does is that it creates a virtual space where we meet, where we all are present. I believe that every single act of communication even if it's just a thumb up or something, it counts. If I'm a new person, and I post something there and I post it into the void, an empty chamber, that might turn me down. But if there's another person who reacts to that post, there is a communication. Act of communication binds people together." –Sam*

Slack's asynchronous nature was reported to be particularly useful for the volunteer activists of the organization.

*"Especially for our particular demographic, and the way in which we flirt with being a professional association almost, the asynchronous nature of Slack is super crucial. These folks are going to have other commitments, and they're not going to want to feel completely disenfranchised, completely separate and alienated if they miss a face-to-face meeting" –Emily*

Although not everyone in the organization was comfortable with the online mode of communication.

*"I think people have different communication styles. I noticed that some people who don't really type out that much are much more willing to speak out loud and talk through their idea processing and bounce off ideas in that way." –Emma*
*"I don't think you get to know people's personalities as well on Google groups and Slack channels. I think seeing how people fill in different roles when you're all in a room together is different than the kind of roles people fulfill when they're in an online community." –Jasmine*

On a related topic, participants further noted that their practices for reflexive dialog in the organization would be incomplete without face-to-face meetings. In an attempt to combine the affordances of the offline and online modes of communication, members did a synergistic use of Slack and face-to-face meetings. For instance, once the date and the time of the monthly meetings would be set up, the agenda for the meeting would be collaboratively edited over the document sharing feature on Slack. Opening the meeting agenda for everyone in the organization to edit and modify was a step toward including the voices of individual members in the planning phase of a meeting. Similarly, the notes from the monthly meetings would have a record of reflections from members, which would then be posted on Slack as a "note" that can be further edited by other members.

**Perceived Weaknesses of Current Practices for fostering Reflexive Dialog** While Slack was useful for sharing relevant readings and having discussions on them, when they had to de-

cide on movement strategies, Slack had limitations. Members would organize face-to-face meetings dedicated to specific issues that might arise within the organization. For instance, in August 2017, in an attempt to have an informal reflexive meeting, SftP-Atlanta organized a retreat where all core members went hiking to a nearby trail and discussed their visions for the organization. In this retreat, in addition to discussing future projects that each member would like for the organization to be involved in, members of the organization critically reflected on the inherent politics of their sociotechnical practices. SftP-Atlanta advocated for an open and transparent method of scientific inquiry, and more specifically for Open Science. However, the closed source nature of all the tools that they used made some of the members uncomfortable. As Sam shared,

> *"On principle, I think Slack, should not be our first choice, because it's proprietary, it's not open source. It's not easily customizable for our needs. Plus, we don't know where all our data is going, you know. Personally, I am looking forward to at some point hopefully replacing that with a similar tool that is open source. But most people knew Slack and introducing a new tool require work, it requires time, and of course, we don't want to get stopped by these technical things." –Sam*

On a similar note, another member reflected on how tools with an explicit purpose and political values have the potential to contribute to the social and political ecosystem of an organization.

> *"It just becomes this community built around a platform that has a politics associated with it. I think there's always politics built into a system." –Emma*

Emma referred to the success of Riseup[11], in building a community around their work. Riseup is a collective that provides secure online communication tools (email account, email list, VPN, online chat, etc.), and as they say it on their website, they are focused on supporting "people and groups working on liberatory social change." Our participant

[11] `https://riseup.net`

further expressed that her experience with different activist work led her to believe that there is an opportunity for a tool developed with the values of social justice to solidify the network among different social justice organizations.

> *"I think that overall that will really strengthen social movements is when people are using similar platforms. You don't have to learn how to use something just to participate." –Emma*

While there must be more to a successful grassroots network than just a tool, Emma's reflection does speak to the gap that exists between the social systems of grassroots movements wanting to practice new modes of democracy and the technical systems not supporting that. For instance, during the first few months of organizing SftP-Atlanta tried to implement a democratic model with emoji-based voting and other social rules associated with voting-based decision making. However, after a few successful implementations of this method, they also reported having struggled with establishing a reflexive infrastructure for decision-making with the process of voting. As one participant noted,

> *"The Slack vote versus the subsequent discussion at the most recent monthly meeting was vastly different. On Slack I was like 'meh I don't care', and so I would take a neutral position. But in the meeting, someone explained why she voted yes, and I was like 'oh that actually makes me change my opinion'. And I can tell you, I was not the only one." –Alex*

After realizing that the emoji-based voting was not adequate in supporting the group reaching consensus transparently, the group started a ritual for members to add a comment on the voting thread explaining their decision on the subject. While some members followed that policy, from my observation of the group I could see that it did not help resolve the issue.

> *"It's often not enough to know one's decision. In a group like ours, there has to be*

*a space for dialogue in decision-making." –Emily*

The Freirean model of participatory communication theory puts a strong emphasis on the role of reflexive dialogue in facilitating democratic participation. Reflection, according to Freire's pedagogy of social action, complements action as the other half of praxis [54]. I argue that for there to be a successful reflexive environment for grassroots democracy and decision-making, members need to know more than "yes/no" opinions of other members. Decision-making, as a reflexive and pedagogical process, calls for adequate transparency in the sociotechnical practices enabling reflection. Transparency in this sociotechnical sense further speaks to both Alex and Emily's account of the weakness of slack-based decision making: it lacked space for a meaningful exchange of opinions.

What does a meaningful space for communication and collaboration look like? What does it mean to design such an infrastructure? CSCW researchers Erickson and Kellogg were invested in designing collaborative tools and technologies that would make meaningful communication happen [114]. They realized that in order to support communication that is deep, coherent, and productive, digital platforms need to support three essential elements of social interaction: visibility, awareness, and accountability. They named this combination of design qualities as social translucence [114]. Although emerging from very different sociopolitical settings, there is an interesting similarity between the communication needs of SftP-Atlanta and the social situation that the idea of social translucence was built upon. Toward justifying the three principles of a social translucent system, Erickson and Kellogg tell the story of a door with a design problem: "opened quickly, it is likely to slam into anyone who is about to enter from the other direction" [114]. A successful design solution for this problem, they argue, is putting a glass window in the door. This solution would work for three reasons.

One, the glass window would make socially significant information visible, that is to say, someone opening the door would be able to see the presence of another person on the

other side. The element of design supporting this process is visibility. Secondly, along with visibility, it would also support awareness in the sociotechnical system: meaning, based on what one perceives to be on the other side of the door they can make a choice of whether or not to open the door. Awareness creates an opportunity for social rules to govern our actions. Thirdly, it would provide a way for the person on the other side of the door to hold the person opening the door accountable for the choice he makes. Thus, ensuring the third element of social translucence: accountability [114].

SftP-Atlanta's sociotechnical practices for reflexive dialog—from using Slack as a community space where members could have political discourse to leveraging face-to-face meetings for greater accountability within the ecosystem—strive for greater visibility, awareness, and accountability within the organization. While SftP-Atlanta's goals for transparency and accountability have philosophical roots that can be traced back to the Freirean model of participatory communication theory, it can be argued that these philosophical values can be operationalized in sociotechnical systems with the more instrumental value of social translucence. Finally, our participants also emphasized the role of emotions in social movement organizing. According to a participant, the monthly face-to-face meetings were more effective in fostering emotional connections among the members.

> *"I think virtual platforms are necessary but not sufficient. To really feel emotionally connected, to really have buy-in to the group in a way that encourages self-sacrifice, you need more than just virtual. Like, "I don't feel like getting up this Saturday morning but I'm going to, to go to this meeting because this matters"—that emotional component is very hard to build through virtual communities. Also, just try imagining virtually attending Tahrir Square!" –Emily*

Emotions play a big role in any volunteer-driven not-for-profit organization. In the case of a grassroots organization, it is one of the most essential elements in social movement organizing. There are also different webs of emotional networks in play in the landscape

of SftP-Atlanta. There is an emotional connection among the volunteer activists of the organization who worked together to build and sustain the movement. Our participants also reflected on how their personal transformation from "researchers in a lab" to "volunteer science-activists working with a community" was an emotional journey and learning process for many. As participants reflected, their partnerships with the different communities were driven by a sense of solidarity that would be impossible to establish without face-to-face meetings and gatherings with the representatives of those communities.

> *"You hear about food desserts and you have an idea of what the situation looks like. But how would we imagine a solution to it if we never actually experience what it feels like to live there? The truth is, most of us never will. But for this food co-op project, I am glad that we have established connections with community workers from Lakewood who know about what is going on and who have been fighting their battle for years. We are just joining forces." –Sam*

Technology can never fully substitute some of the unique qualities of social interactions in grassroots organizing. The emotional component of movement organizing is one such. However, it is possible to imagine systems that work synergistically with the offline spirit of grassroots movements by staying committed to the bottom-up nature of grassroots movement formation and by addressing the concerns mentioned in the previous sections. As Ackerman pointed out, the sociotechnical gap of CSCW systems is perhaps unavoidable, but if we are aware of the nature of the gaps we can acknowledge them and design around them. In Ackerman's words, "an understanding of the sociotechnical gap lies at the heart of CSCW's intellectual contribution. If CSCW (or HCI) merely contributes "cool toys" to the world, it will have failed its intellectual mission. Our understanding of the gap is driven by technological exploration through artifact creation and deployment, but HCI and CSCW systems need to have at their core a fundamental understanding of how people really work and live in groups, organizations, communities, and other forms of collec-

tive life. Otherwise, we will produce unusable systems, badly mechanizing and distorting collaboration and other social activity"[61].

## 3.5 Designing for Values in Grassroots Movement Building

So far in this thesis, I have described three modes of inquiries toward my original research question: what is the role of social computing technologies in grassroots movement building? My philosophical inquiry led us to the Freirean model of participatory communication theory (see Chapter 1). Grounded in this theoretical framework, I further contextualized the findings from my empirical inquiry on the perceived strengths and weaknesses of the sociotechnical practices of SftP-Atlanta. On a more technical note, I have also talked about how as an action researcher I helped SftP-Atlanta build their web platform. My overall investigation in this "sociotechnical mess" [48] of SftP-Atlanta reveals that the organization chose commercial social computing technologies that were not developed with grassroots groups in mind. As my description of their sociotechnical ecosystem suggests, most of these tools were chosen by the ten core members, and out of expediency. Furthermore, I noted that while the organization tried to appropriate these social computing technologies for their collective purpose, the values inherent in them often conflicted with the values of grassroots organizing. My analysis of this conflicted relationship between the social and technical systems of SftP-Atlanta in each step of their movement building further led me to identify a set of three values that the process of grassroots movement building calls for: inclusivity, privacy/security, and social translucence. My findings suggest that grassroots groups would benefit from having sociotechnical infrastructures and practices that attend to these values.

As CSCW researchers in this space, we believe that computing technologies can serve purposes that are more than just functional; they can also carry substantive social, moral, and political values. As we aim to design for the purposes of grassroots movement building, there is a need to investigate: what does it mean to design for these values? Toward this goal, I will draw from both my philosophical and empirical inquiries: a combination that, according to Flanagan et al.,

can lead us to a critical understanding of technologies and the values encoded in them [107]. In their words, philosophical inquiry "contributes to the effort of embodying values in design by articulating the rationale behind, or the justification for, commitments to particular values in a given system." Additionally, an empirical investigation not only "complements the philosophical inquiry into what values are relevant", but it also functions as "the primary means for addressing, systematically, the question whether a given attempt at embodying values is successful" [92].

I will now draw from the Freirean model of participatory communication theory [54, 56] and the empirical account of SftP-Atlanta's process of movement building to expand on the three core values we identified: *inclusivity*, *privacy/security*, and *social translucence*. While I reflect on the philosophical roots of these values, in what follows, I will also suggest design implications for both social and technical interventions that can be used to instrumentalize these values of grassroots movement building.

### 3.5.1 Inclusivity

A central tenet of grassroots movement building is its commitment to democratic participation at all levels: individual, local, regional [55]. My philosophical and empirical investigations suggest that SftP-Atlanta attempted to construct an environment that strives to grant every member an equal voice. This notion of practicing a truly participatory democracy is rooted in Freire's philosophy and the theoretical framework of participatory communication. In Freire's words, "this is not the privilege of some few men, but the right of every (wo)man. Consequently, no one can say a true word alone –nor can he say it for another, in a prescriptive act which robs others of their words" [54]. Freire's philosophy and SftP-Atlanta's movement-building, therefore, speaks to the value of inclusivity in grassroots movement building.

Inclusion, in this context, would mean that all members feel comfortable with suggesting new ideas, taking an active part in the decision-making process, and even dissenting with existing principles if needed. For a group like SftP-Atlanta where there is an inevitable power relationship between the middle-class scientists and marginalized communities from lower socioe-

conomic backgrounds they work with, inclusivity would have to practice with an awareness of that unequal group dynamic. For SftP-Atlanta, this awareness led them to purposefully center the knowledge and experiences of the historically marginalized communities when it came to making decisions about a project in these communities. While SftP-Atlanta strives to maintain an inclusive environment, both my empirical investigation and participation in the organization shows that their intention of becoming a participatory and democratic environment often conflicted with the values encoded in both the technical systems they chose and how they chose those tools. The technologies in their ecosystem were chosen by a few of the core members and were presented to the newer members as a given. While some members reflected on how they had to "learn" Slack for the purpose of taking part in SftP-Atlanta's organizational activities, many members expressed that they felt left out. While choosing technologies as an essential part of the grassroots infrastructure can be empowering for groups, certain tools assume certain levels of technological competence from its users. Therefore, the same tools that serve a seemingly functional purpose of communication can be disempowering for the technologically disadvantaged members of the movement. I argue that one of the many ways social computing systems can operationalize their commitment to inclusivity is by lowering their entry barriers as much as possible so that the system does not end up favoring the technologically privileged members of the community. Additionally, grassroots groups who choose to use systems with higher barriers should have regular training on those tools, where more experienced members can educate the new members on the tools in use. There also needs to be a culture within the movement for ongoing critical reflections on technologies that a grassroots group chooses to use. Finally, grassroots groups can stay aware of the challenges that choosing a technology brings to their goal of inclusivity, and further use their social infrastructures (in the case of SftP-Atlanta, their face-to-face monthly meetings) to mindfully and intentionally accommodate the voices and opinions of the technologically marginal members of the group.

### 3.5.2 Privacy/Security

My findings suggest that in order for there to be successful collective action, members need to trust in the platforms enabling such actions. Fostering this sense of trust, however, will require the social computing systems to be designed with a commitment to the value of privacy/security.

Issues of privacy, security, and trust have long been a topic of interest for social computing researchers. Acquisiti and Gross identified trust/security management as one of the key responsibilities of Social Networking Systems (SNS) [112]. Shin extended that argument and articulated the relationship among security, privacy, and trust in the context of SNSs [115]. Perceived security is "the extent to which a user believes that using an SNS application will be risk-free" [115]. Palen and Dourish present privacy as a dynamic and dialectical process [116]. Dourish and Anderson further argued that privacy and security in design should be reimagined as "collective information practices" [117]. In their vision, collective information practices refer to "the ways in which we collectively share, withhold, and manage information; how we interpret such acts of sharing, withholding, and managing; and how we strategically deploy them as part and parcel of everyday social interaction."

CSCW researchers have also engaged with the special privacy needs of communities committed to the causes of social justice. Activists perceive themselves as dissenters from the traditional power structures [118]. They further perceive their dissent to be risky work that sometimes requires protection from the surveillance of the State or other power structures they might be up against. Studying the work of political activists in a Palestinian village in the West Bank, Wulf et al. have reflected on how privacy in the context of social media (particularly Facebook) was identified as a concern for the activists [119]. Driven by a similar concern around privacy, Tad Hirsch built the activist messaging tool TXTMob. Hirsch's tool particularly focused on ensuring a private and secure communication platform to movement organizers [118]. I align myself with the work done by Hirsch and echo the concerns raised by past researchers around the issues of privacy, security, and trust in social computing systems [112, 120, 115]

In order to ensure a secure infrastructure for grassroots movement organizers, social com-

puting systems will have to implement better encryption policies in messaging, offer a secure infrastructure for data storage and maintenance, and clearly communicate their privacy policies to their users. Additionally, making the source code of the technical systems open and providing greater transparency on how encryption works in the systems can foster greater trust in the system. Finally, security and privacy features are useless if they are not usable by real people in real situations. This presents particular challenges for grassroots groups that, as discussed in the previous section, aim to include people from diverse educational and socio-economic backgrounds as first-class citizens in their organization. Therefore, in addition to choosing technologies that promote better privacy/security, grassroots groups would have to also invest time in collectively developing knowledge and skills of certain privacy practices.

### 3.5.3 Social translucence

Grassroots organizations like SftP-Atlanta follow a bottom-up approach to movement organizing. One of the practical ways in which SftP-Atlanta tries to do that is with participatory decision-making—where every member of the group gets to contribute to the decisions made by the group. While in the beginning, SftP-Atlanta attempted to use the affordances of Slack-based voting for this purpose, they quickly realized that it was not enough to count opinions in order to reach consensus. They needed to make space for letting members frame and justify their positions publicly. Decision making, in their context, had to be a participatory process that allowed the group to come to a collective decision through reflexive dialog among members. This in turn called for more transparency within the organization. I propose that this need for a more transparent environment can be addressed with sociotechnical practices of social translucence [114]—this means both socially and technically designing for greater visibility, awareness, and accountability within a grassroots organization.

A socially translucent grassroots infrastructure supporting reflexive dialog will have both developmental and solidary outcomes [35]. Greater visibility and awareness of how decisions are made, projects are conceived, and tasks are accomplished will have the developmental outcome

of making members feel more agency over the actions made by the group as a whole. Seeing how decisions are made also has the potential to re-create new forms of solidarity by recognizing the legitimacy of different opinions.

I argue that a socially translucent infrastructure is crucial for the kind of participatory democracy SftP-Atlanta strives to practice. Social translucence as a grassroots design value speaks to the two core requirements of a participatory democratic environment: transparency and reflexivity. While transparency speaks to the affordance of being able to see how different opinions are formed, reflexive dialog, as Freire discusses it, makes space for a more pedagogical process of decision making. Especially for a group like SftP-Atlanta, where the scientists and the historically marginalized communities they collaborate with often had very different socioeconomic realities, a successful participatory decision-making process could potentially serve the pedagogical purpose of learning where each member is coming from. Moreover, the socially translucent practices within SftP-Atlanta were also meant to serve the developmental purpose of providing historically marginalized groups with an opportunity to hold science and scientists accountable for their work in these communities.

However, as I have noted before, SftP-Atlanta's philosophical goal of transparency and reflexivity often conflicted with the values within their sociotechnical practices around Slack. How would this radical exchange of dialog between scientists and community members happen if decisions are made in Slack – a tool that inherently favored the more technologically adept members of the group? Even when they voiced their opinions on issues on Slack, voting yes/no on the subject of an issue meant little. While SftP-Atlanta's internal structure was unique in its own way, issues of visibility, awareness, accountability, are just as present in other venues of collaborative communication platforms. Erickson and Kellogg suggested ways in which designers can intentionally design for greater visibility, awareness, and accountability [114]. Introducing the notion of social translucence in the realm of social computing, Erickson and Kellogg identified three specific needs that socially translucent systems should be designed around: namely *activity support*, *conversation visualization and restructuring*, and *organizational knowledge spaces* [114]. I argue

that social computing technologies that are committed to enabling the transparent and reflexive environment of grassroots organizing can benefit from incorporating these design suggestions made by Erikson and Kellogg, thereby exercising a commitment toward the design value of social translucence.

While social translucence was introduced as a design idea for transparent communication infrastructures, social translucence in the grassroots sense is more than just a technical task. Grassroots groups will have to stay mindful of how their choice of certain technologies might act against the transparent and reflexive environment they wish to cultivate. They can further prioritize the presence of the primary stakeholders when making decisions on certain issues and let that determine the place and method in which a decision is being made. For example, in the case of SftP-Atlanta, a social intervention toward fostering social translucence might look like having these face-to-face meetings about the "Urban Garden" project in the neighborhood of Lakewood—which would allow more visibility, awareness, and accountability within the community.

### 3.5.4 Relationship among the three values

In this section, so far, I have discussed the philosophical roots of each of the values I identified. I further connected them to CSCW literature that provides insights on how to instrumentalize those philosophical values. Now it's important to acknowledge that there is a complex relationship among the three values we describe. While philosophically these three values are interdependent, when realized in a more instrumental way through design, they can be in conflict with one another.

Although in my analysis each value is identified in each step of the movement-building process of SftP-Atlanta, these values flow through the overall philosophy of grassroots movement building. Furthermore, these steps of movement building are iterative, and so are the values that emerge from them. This means that, although privacy/security can be traced back to the step of collective action, according to Freire, collective action is incomplete without the presence of

reflexive dialogue. Thus, privacy/security becomes a necessary value for a reflexive environment too. Similarly, ensuring a secure infrastructure can also lead to a more inclusive environment in the organization. And so, incorporating these values both socially and technically would result in more purposeful sociotechnical practices for grassroots movement building.

On the other hand, speaking of instrumentalizing these core values with design, I further identify that there are tensions among these values. My research participants reported interesting dichotomies that clearly show how these values are often in conflict with one another. For instance, many of the tools that currently offer privacy/security in communication often have low inclusivity and higher entry barriers for technologically less-adept individuals. On the other hand, Facebook's higher inclusivity comes with the cost of privacy/security of the members who would rather not broadcast their participation in certain activist events.

Furthermore, my findings suggest that a platform supporting reflexive dialog and democratic decision making requires a socially translucent infrastructure for collaboration and communication. However, as Erikson and Kellogg point out while describing the challenges of designing socially translucent systems, there is always going to be a tension between visibility (one of the key attributes of socially translucence) and privacy/security [114]. According to Erickson and Kellogg, this essential tension between privacy and visibility is what differentiates socially *translucent* systems from socially *transparent* systems. They argue, "privacy is neither good nor bad on its own—it simply supports certain types of behavior and inhibits others" [114]. They further explain this contextual nature of privacy with the example of elections. In elections, the perceived validity of the process depends primarily on keeping certain aspects of the election private and others public. While the private aspects of the election process offer voters a secure infrastructure to vote, the public aspects of the process keep those who count the votes accountable to the voters. The qualities of visibility and accountability in socially translucent systems, therefore, have to constantly negotiate with the notion of privacy/security.

This complex relationship among the three core values poses as a necessary yet difficult challenge for us as CSCW researchers and designers. This challenge is not unknown to the field of

values-in-design. As Flanagan et al. aptly note, "engineering is rife with such conflicts—whether to favor safety over cost, transparency over privacy, aesthetics over functionality, with many more appearing at layers of fine granularity" [107]. They suggest resolving, dissolving, and trading off as three possible strategies to manage such conflicting values. Further, navigating conflicting values when choosing technologies is an internal challenge for grassroots groups as well. Our analysis can be helpful for grassroots organizations who want to make a critically informed decision about technologies they want to use. A critical evaluation of these technologies can further inform their sociotechnical practices of movement building. To provide an example of how our analysis could be used, in the following table I describe the strengths and the weaknesses of tools that SftP-Atlanta chose to use with respect to the values of *inclusivity*, *privacy/security*, and *social translucence*.

| Current tool | Strengths | Weaknesses |
|---|---|---|
| Facebook | *Inclusivity.* Facebook being a popular social networking platform, the barrier to entry was very low. | *Privacy/Security.* Facebook's public nature was threatening to many of the movement organizers. |
| Google tools (drive, groups, email) | *Inclusivity*. Google tools were popular among the members. Barrier to entry was much lower compared to Slack.<br>*Social translucence*. Supported the collaborative processes of framing the collective identity with visibility and awareness. | *Privacy/Security.* The overall lack of clarity around where all the data is being stored was a concern for many. |
| Slack | *Social translucence.* Supported the process of internal communication, task management, and voting-based decision making with adequate visibility. | *Inclusivity.* Members who were already not on Slack were uncomfortable with the interface and distanced themselves from the tool<br>*Privacy/Security.* For a platform serving as the primary mode of internal communication, it was not perceived as a secure medium of communication.<br>*Social translucence.* Slack did not provide the kind of socially translucent environment required for participatory decision making. |

I finally argue that in order to successfully design sociotechnical systems for the causes of grassroots movements, we need to understand the values embedded in them in all their complexities. My identification of the core values of inclusivity, privacy/security, and social translucence was the beginning of that endeavor. In the next chapters, I will share in detail about how I applied these insights toward designing new communications tools for both Science for the People Atlanta and a larger coalition of groups called that Southern Movement Assembly that SftP-Atlanta is part of.

## 3.6 Conclusion

> *"Freire is clear that education and cultural processes aimed at liberation do not succeed by freeing people from their chains, but by preparing them collectively to free themselves. This is dialectically facilitated when conversation is replaced by a dialogical praxis" [121].*

With this chapter, I make three contributions to the HCI literature on designing for social justice. First, I highlight the value of using Freire's model of movement organizing to understand and help an organization working for social justice. Second, Le Dantec et. al. [122] make a compelling case that values must be learned from participants, and suggest that more work is needed to understand methods for learning those values. In this work, we successfully used action research as a method for learning values from participants and suggest this method is particularly suitable in the area of designing for social justice. Finally, the specific values we learned from our participants—inclusivity, security/privacy, and social translucence—we believe to be more broadly useful to others studying and partnering with grassroots organizations.

In Freire's participatory communication theory, grassroots social movement organizing is not just an organizational process, it is also a pedagogical journey that strives to bring social change. Furthermore, the journey is as much a collective journey as it is an individual one. The essence of democratic participation in movement organizing is in its success in enabling all individuals to speak for themselves as they work toward a collectively identified goal. The philosophy of

social movement organizing, as McLaren says, is not just to facilitate collective action but to do it through a process that brings agency to every individual involved in the action.

It is easy to get lost in the mundane, day-to-day details of organizing. (Who is going to the meeting? Did we decide whether to partner with that new community group? Has the website been updated?) Freire's theory was suggested to us by our participants, and we and they have found that it helps focus our attention on the bigger picture. The accumulation of these little day-to-day decisions shapes an iterative process of forming a collective identity, planning action, and reflection. A focus on Freire's notion of praxis particularly reminds us that reflection and action are interdependent. We believe that Freire's theories can be of great use to members of the HCI community trying to design for social justice.

As we design systems to support the philosophical process of social movements, it is crucial for CSCW researchers to understand the values embedded in grassroots organizing. While communication technologies are becoming increasingly popular in these processes, as observed in the internal organizing process of SftP-Atlanta, there exist use-cases where the same technologies are either insufficient or, as observed in this case, such technologies might accidentally disempower members of the organization. To make sense of some such conflicts, in this chapter, I offer an analysis of this sociotechnical reality of a grassroots social movement grounding myself in a social movement theory that they subscribed to. I have observed the movement since the time of its inception, partnered with it as it grew a sociotechnical ecosystem to support its organizational goals, and studied its use of social computing technologies in facilitating collective action. Toward my research question of critically understanding the role social computing technologies play in grassroots movement building, I aligned myself with HCI researchers and practitioners who have taken a similar critical approach and further urged us to look at the values encoded in and reproduced through the technologies we choose to use. My close partnership with SftP-Atlanta let us see how the members of the organization often struggle with the same technologies that they chose to use for their work. My analysis of both the strengths and the weaknesses in their sociotechnical practices led me to identify *inclusivity*, *privacy/security*, and *social translucence* as

three values that future design of social computing systems can embody in order to better support the process of grassroots movement organizing. I also call to mind that as designers and researchers working with a commitment to these values, we not only need to keep an eye on each individually, but also on the ways they interact with or move in relation to one another.

# CHAPTER 4
# TOWARD A GRASSROOTS CULTURE OF TECHNOLOGY PRACTICE

## 4.1 Introduction

As I have noted through the previous chapters, grassroots social movements in the U.S. and beyond have emerged out of people's shared experiences of systemic inequity, marginalization, and exclusion [123]. Most of these movements are not about a single leader or an organization—they are driven by people at the front lines of political struggle against systemic oppression [31]. While a central goal of these movements is to demand equitable outcomes from societal power structures, it is equally important for them to be radically inclusive toward that goal [35]. At a practical level, grassroots culture calls for centering marginalized voices and experiences in every step of decision-making, self-governing, and strategizing. That said, even for groups who put the highest priority on participation and democracy, making it happen in practice poses considerable challenges—I show an example of this conundrum in the last chapter with Science for the People-Atlanta. Notably, modern information communications technologies (ICTs) both support and hinder grassroots practices in complex ways [4]. In this chapter, I describe and critically reflect on the conflicted relationship between grassroots movements and their technologies to gain insights on how to design *a grassroots culture of technology practice*.

This chapter will tell the story of my collaboration with a large-scale grassroots social movement, the Southern Movement Assembly (SMA). SMA is a social movement consisting of 118 local grassroots organizations from all over Southeastern United States[1] and the broader land of the Global South. Emerging from the rich political history of the U.S. Social Forum [18] and the World Social Forum [7], SMA has been successfully building and sustaining a large-scale social movement for over eight years. The member organizations of SMA coordinate their efforts and

[1] `http://southtosouth.org`

share resources to help resist inequality and work for social justice across the region.

Continuing my involvement with the local organization (SftP-Atlanta) I worked with in the first year of research, I became a part of this larger collective of local organizations that SftP-Atlanta also joined in October of 2017. While I joined as an activist invested in the idea and the practice of sustaining a Southern identity [8] of a movement—an identity that was important to me personally because of my Global South organizing past—I moved my research questions to this movement around early 2018.

This chapter as well as Chapter 5 are a result of my three years of participation in the SMA [45] starting from late 2017. In this chapter specifically, I report on the first sixteen months of detailed field notes from my participatory action research with SMA, and eleven interviews with SMA members. As an action researcher, my primary goal with SMA has been to support them in integrating ICTs into their *grassroots culture*.

Toward understanding the role of ICTs in a grassroots culture, it is important to understand grassroots culture itself, especially the practice of grassroots politics. Thus, the first research question in my work with the SMA was:

> *How does the Southern Movement Assembly (SMA) practice grassroots politics? (RQ1)*

The second step to understanding the specific role of ICTs in grassroots culture is to examine the ways in which digital tools get used by members of the movement. This leads to the second research question that I will attempt to answer in this chapter:

> *How does the SMA currently use and perceive Information and Communication Technologies in their practice of grassroots politics? (RQ2)*

Toward answering *RQ1* and *RQ2*, I first find that SMA depends on ICTs that are often at odds with their core values, much like the local organization I discussed in the last chapter. However, the differences between values of the movement and its ICTs manifested differently for the regional movement of the SMA. SMA's values and practices are rooted in a multitude of ideologies, which, according to my findings, converge to the notion of *inclusivity*. Inclusivity is seen by

SMA as a political value and practice that focuses on not only the representation of marginalized people but also a radical transformation of the power structures that enable systemic exclusion in the first place. Sustaining such a culture of radical inclusion translates to practical needs such as facilitating a meeting, note-taking, and making flyers and posters—needs that often require the use of ICT artifacts. SMA primarily uses popular centralized ICT solutions (e.g. Google Drive, Facebook, Twitter) for their communication needs; particularly, the ones that are marketed as technical solutions for needs such as collaboration and inclusion. At the same time, they also explore choices in free and open-source software (FOSS). However, SMA's use of ICTs leads to inequitable outcomes in their sociotechnical systems: technically competent people having more power and voice, technical expertise being associated with whiteness, masculinity, young age, and other normative characteristics, and value-driven technical choices (i.e. adopting FOSS solutions) coming with hard trade-offs such as finances, usability, and technical labor.

Thus, while ICTs enable SMA to achieve its objectives in significant ways, SMA also acknowledges that their use of ICTs is non-conventional, and their choice of technologies is sometimes fundamentally at odds with what they believe. This dialectical relationship between a social movement and the technology it uses has contributions for broader questions [63, 61, 108] raised by past researchers in the domain of computer-supported cooperative work (CSCW). These questions include: what happens when CSCW applications are used for values that they were not meant to support? Whose values do CSCW applications mean to support in the first place? How can the CSCW community effectively accommodate various more marginalized cultures of technology-use? In this chapter, I contribute an analysis of how a large-scale regional grassroots social movement grapples with similar questions through their use of CSCW technologies. Through my findings, I show that the means of ICT production can have complex implications for power and marginalization in certain communities, including grassroots social movements. Furthermore, I do a systematic analysis toward understanding *why* these complex implications arise. Finally, I weave together my findings to derive lessons for both communities, i.e., new means to design and produce technology in CSCW and HCI to better accommodate grassroots needs

and a localized culture of technology practice in grassroots communities that will hold ICTs accountable for the values they embody and promote.

## 4.2 Participation, Data Collection, & Analysis

My relationship with the SMA begun on the note of collaborating on their movement practices—not in the capacity of researchers but as a member with skills SMA deemed useful for the movement. In October 2017, I attended SMA's annual meeting as a representative of the local organization I was studying and organizing with at the time—SftP-Atlanta. I think it's important to mention how my partnership with the SMA evolved with time from here on, as the relational work involved in community-centered research is a key method of the work itself. This is also important to note because I want to reiterate what my positionality has been in the community setting in the context of the studies I describe in this chapter and the next one.

I did not go in as a researcher with the objective to "fix" things for others. Instead, I went to SMA to learn from the years of organizing experience they had—as a scholar of technology and an SftP-Atlanta member with a deep commitment to social justice issues, I wanted to learn more about the role technology played in the Southern movement organizing initiatives. SMA found my presence beneficial for their movement, particularly because the Global South organizing experience I brought to this community was deemed necessary for the movement (I share more on my positionality in relation to my research in Chapter 1). In the first meeting attended of the SMA, they made a declaration of how the Southern movement, as they want to imagine it (also shared more on this shared meaning in Chapter 1), needs Global South representation, and that they were looking forward to growing their solidarity with the Global South, especially with the struggles against capitalism, antiblackness, caste-oppressions, Islamophobia, etc. They were also actively looking for more politically committed people with "technical skills" to support them with communication needs. SftP-Atlanta with its goal of mobilizing technology and science toward causes of social justice was considered a valuable partner organization to be included in the SMA. It was on this note that I started to participate in regular SMA meetings—weekly

calls hosted on the video communication platform Zoom. These meetings, in many ways, held the movement together. Especially after a large event that managed to recruit several new people in the movement from all over the South, these regular video calls seemed like a necessity to welcome and orient new members with the culture of the movement. For me, this was also the first introduction to SMA's technology artifacts.

From this moment on, I gradually became a central member of the movement particularly with my work with joining and sustaining a communication working group along with other members of the movement. The communication team was closest to the technology infrastructure of the movement as they were founded with the main objective of maintaining the movement's technologies. Beyond the technical support duties, this team also stayed open to examining the politics of the technical problems and needs that came up in the community. For example, during a meeting in rural Mississippi organized by one of SMA's partner organizations, the communications working group realized that the lowest registration count was from people and communities in rural Mississippi who were supposed to be at the center of the activities otherwise. Later in the meeting, they further realized that there were several people attending the meeting who could not manage to register using technological means due to issues of access and ability. SMA wanted to work toward a cohesive practice of communication across the movement that addresses incidental exclusions such as this.

Starting August of 2018, as a part of the communications working group, I started traveling with the rest of the movement to different parts of the Southeastern United States, especially the Rural South, wherever SMA has partner organizations from and organized community events at. So far I have traveled to rural towns of Mississippi, Alabama, Georgia, North Carolina, etc. to attend meetings of the movement. Typically, these meetings were about sharing local problems and solutions and coming up with regional strategies and systemic analyses to help make sense of how local issues are in fact deeply interconnected. These events also mean to foster regional solidarity among the partner organizations as well as the states they represent. This is also an effort to maintain a sense of regional camaraderie, or as SMA calls it, the Southern power rooted in the lived

truths of the people who are at the margins of the society. I became one of the communication leads in organizing the annual meeting of the SMA in November 2019.

Throughout my collaboration with the SMA, I took detailed notes of my own experiences and that of others in the community over the three years I have been involved with them starting in October 2017. Following a core value of action research, I was both a participant and an observer in the community of SMA. Through these observations, participation, and lived experiences as a prominent SMA member, I paid close attention to SMA's relationship with technology ranging from people of color in the rural parts of U.S. South feeling distant from technology due to lack of access to members enthusiastically posting SMA's activities on social media. In addition to my participation, to get more personal accounts of other members of the SMA, I did eleven semi-structured interviews with SMA members. This chapter covers the interview work I did with the SMA.

The interview participants (Table 4.1) vary in their degree of participation within SMA, as well as in their organizing backgrounds and experiences. They have varying degrees of comfort with technology. Because SMA members are part of the movement through their home organization (I describe SMA's structure in further detail in the next section), many participants were able to speak not only to their personal involvement in SMA but the role of their home organization as well. Participants were recruited through connections that I made through my involvement in the movement. The interview questions centered around the participants' history as an organizer, their involvement in SMA, SMA's decision-making process and grassroots practices, and the technical artifacts used by SMA. Because some members have more experience with certain parts of the movement's work, I made an effort to recruit participants who were bringing different skills to the organization (for example: note-taking, communication, or facilitation). In the recruitment process, I also actively looked for people who were situated in different positions of power within the movement (e.g. while I recruited governance council members, I also looked for people who are more peripherally located in the movement).

After transcribing the interviews, I conducted inductive and deductive coding to categorize

Table 4.1: List of participants in my interview study with the Southern Movement Assembly

| Participants | Age | Race and/or Ethnicity | Role in organization |
|---|---|---|---|
| P1 | 42 | African-American | Governance council member, SpiritHouse Representative |
| P2 | 19 | African-American | Member of Project South (anchor organization of SMA) |
| P3 | 78 | African-American | Member of Southern Region National Council of Elders (participating organization of SMA) |
| P4 | 30 | Haitian | Member of political education and research workteam of SMA |
| P5 | 24 | Mixed-race | Communications team member; also represents participating orgs like: Miami Workers Center, Tree Defenders member. |
| P6 | 41 | White | Governance council member, co-director of anchor organization Project South |
| P7 | 75 | White | Note taker, retired history educator |
| P8 | 69 | White | Nurse and founding member of SMA |
| P9 | 28 | White | Governance council member; represents anchor organization Concerned Citizens for Justice |
| P10 | 26 | White | Youth advocate, Member of participating organization Power Shift Network |
| P11 | 72 | White | Governance council member |

and understand the emerging themes in the data [124]. The themes emerging from the coding process were analyzed with the lens of technocultural theory [101]. That is to say, I categorized the coded themes into two broad categories: SMA's existing *beliefs* and *practices*, and the technology *artifacts* supporting the work of the movement. The first category of beliefs and practices are presented as my findings on SMA's culture of grassroots inclusivity. The themes categorized as technology artifacts are presented as my findings on both ways in which ICTs help the movement and cause conflict with its practices.

## 4.3 What are ICTs in the Culture of SMA?

In this section, I describe my findings of the different sociotechnical realities of the Southern Movement Assembly (SMA). In the first subsection that follows, I answer the first research question (*RQ1*) by sharing the key beliefs and practices that shape SMA's politics. Next, I answer

the second research question (*RQ2*) by identifying the information communication technologies (ICTs) that support SMA in this process as well as the gaps that exist within the sociotechnical practices of grassroots politics.

### 4.3.1 Beliefs and Practices of SMA: The Culture of Inclusivity

The Southern Movement Assembly (SMA) is a regional grassroots social movement made up of over 118 grassroots organizations from all over the Southeastern United States. SMA is built on the foundational values of participatory democracy [125, 126, 35], intersectionality [127], black radical traditions [128], and other political value systems that critically question systemic injustice. SMA also strongly identifies with the "southern heritage" of resistance since many of the founding members have also been deeply involved in questioning power and oppression in the southern states of the US through various social movements throughout history [128, 35, 123]. While SMA's value system is informed by a multitude of radical values, a core value that all of our participants mentioned in the interviews was *inclusivity*. Inclusivity, as a grassroots value, was discussed in almost all of the SMA meetings I attended.

The term "inclusivity" has found many meanings in the contemporary social and technological discourse—it represents different value systems and practices throughout. Toward answering my first research question, I wanted to first understand how SMA as a movement interprets and practices inclusivity. SMA defines the politics of "inclusivity" as an analysis of power and systemic oppression that not only questions the lack of diversity and representation [129]), but also aims to dismantle the institutional structures that continue to enable such exclusions. According to P1:

> *"What we mean by an inclusive grassroots movement space is more than the neoliberal understanding of diversity and inclusion. We believe that our people—poor people, black and brown folk, queer folk, disabled people, etc.—have been ignored and oppressed for years by those in power. Institutional structures have been put in place to maintain this culture of exclusion. This is not going to be resolved with a few black*

*and brown folk in those same institutions that ultimately thrive on the exclusion of poor people of color, you know? We need to dismantle the structural exclusion with our radically inclusive practices, our movement has got to be governed differently than our country." —P1*

As P1 demonstrates, inclusivity in the sense practiced by SMA comes from a grassroots analysis of structural oppression. At the crux of this grassroots politics of inclusivity is the belief that "no one should be excluded from any form of governance that makes decisions about their lives" [130]. While they demand radical inclusion of voices, experiences, and opinions from traditional power structures of society, they also strive to practice the same notion of inclusivity through their own internal movement culture. Toward their goal of being inclusive and welcoming of the voices and experiences of all members of the movement, they have designed a unique governance structure that accommodates leaders of many local organizations, a decision-making model that goes beyond voting and centers the subjective experiences of people affected by systemic injustices, and finally a culture of holding societal power structures accountable.

Two elements of social system are foundational to SMA's practice of inclusivity: *self-governance* and *participatory decision-making* [35].

The governance structure of SMA is designed to distribute power among many leaders and organizations. Among the 118 organizations that form SMA, there are 18 "anchor" organizations. Anchor organizations are expected to bring in movement resources (money, technology, labor, etc.). At the core of this structure is the "governance council." The governance council has representatives from each of the 18 anchor organizations. Each member and organization of SMA is bound by "the principles of unity"—a document that articulates shared practices, principles, and commitments. One of the key characteristics of SMA's governance structure is that it is purposefully non-hierarchical. Power and resources are not controlled by a small group of leaders. This also speaks to the value of SMA as an "organization of organizations"—made up of 18 anchor organizations, the governance council represents a multitude of perspectives. P5 notes that this goal of building and sustaining "a movement of many" has both practical and philosophical

motivations behind it.

> *"In our meetings, we keep going back to this belief: we cannot do this alone, and we don't want to. To me, the grassroots approach is both at once a practicality and a desire. We can't do it alone, that's just the truth, it's a practicality. But 'we don't want to' speaks to this desire, that we want to be part of something broader; we want to be part of something large, and something connected and something inclusive; something that speaks to many people even if it doesn't speak to me individually."* – P5

P2 and P5 share their perspectives and experiences of building a communal sense of purpose for the movement of SMA.

> *"This country can get stuck at 'me' or 'I' sentences: like 'I have to survive', 'I have to be able to get out of this neighborhood'. To me SMA says, 'your I has to be a we.' Anything we need to do, it has to be for your people who you're accountable to, who you're going to back to at the end of the day, and who are you moving forward for. SMA is about getting rid of this individualistic sense and creating more of a community sense of problems and solutions." –P5*

> *"Bringing so many people together [through SMA ] immediately gives you that sense of 'we'. If you felt alienated, look around you: there are like 300 more people who are here and they're all like you in many ways. Some of them are even from your hometown but because of our still segregated ways of living you don't even get to know and support them." –P2*

The 118 organizations that make up SMA each bring their own perspectives and resources which are carried through the movement by the bottom-up decision-making structure. The labor conducted within the movement is distributed between paid employees and volunteers.

SMA believes that to be able to voice their opinions, people who have been marginalized by traditional power structures first need to realize that their experiences are valued. To make sure

all voices are heard, many grassroots groups use a consensus-based decision-making process [35]. However, there are a number of well-documented problems with this process. The consensus is vulnerable to manipulation by a well-organized subgroup, can be derailed by a single disagreeable individual, and does not scale well [131]. To address these limitations, SMA designed a participatory decision-making process that is called the *Peoples' Movement Assembly (PMA)* [132]. Its purpose is to not just include but truly center the voices and opinions of marginalized people who are most often excluded from political decisions that affect their lives. The ultimate goal is to develop a regional social movement to foster systemic change. SMA's website [2] says: "The assembly process is based on the facilitation methodology of collective critical thinking and analysis, resulting in a synthesis that represents the sum organic total of all of the ideas and commitments."

In a typical PMA, there are two rounds of assemblies: the frontline assembly and general assembly. Each assembly is structured around three steps: consciousness (discussing the lived experiences of a systemic issue), vision (the systemic change that participants wish to see), and strategy (actionable goals to make the vision a reality). SMA holds annual PMAs that involve all organizations of SMA. In the first round of this face-to-face event, the frontline assemblies host people who are the most affected by these issues, the general assembly is a participatory decision-making event that engages all members present. P1 (one of the many leaders of SMA) talks about what frontline assemblies mean to her:

> *"It takes a strong sense of community to hold people in power accountable. When you're ignored for so long you feel alone. Frontlines are where you get together with people with similar experiences, discuss, and then gather the strength to show up in numbers to say to people in power: "look, we see you." Whether you recognize it or not, we're the ones bagging your groceries. We're the ones who are taking your money when you pay for gas. We're the ones serving you in the restaurants, you know. The ones working underneath the hood of your car. We are at the frontline of this struggle, and we are taking notes. You cannot ignore us." – P1*

[2] `http://southtosouth.org`

Participants describe how the core of the decision-making process is hearing the voice of every person in the room. More practically, these voices are documented through a practice that SMA developed called "synthesis." In each phase of a PMA, members split into smaller groups. Each group appoints a member to represent their views to the larger group.

> *"Synthesis is an attempt to form a way of decision making that honors all voices and is also able to be expressed to all people or many people"–P6*

During the frontline assemblies, synthesizers document every contribution, and during the general assembly, everyone in the room gains an understanding of each discussion that took place. P6 discusses the significance of every voice being represented both in terms of decision making and within the movement as a whole:

> *"Well, there's a real practical piece about it, around application. If you have three-fourths of the room, you only have three-fourths of the muscle. If you have the whole room, you have the whole power…If this movement is about everybody, and about everybody getting free, we've got to come at it together, even if there's disagreements with them." –P6*

The PMA process is complex. The design of PMA takes a political stance by centering the process around the frontlines of oppression, and so, as members would argue, PMAs are not neutral [130]. In an attempt to describe how a PMA looks like in practice I will turn to the example of the Climate Justice Assembly that happened in New Orleans in 2016. This assembly, as well as other PMAs, are documented in a handbook produced by SMA [130]—what I describe next is a summary of the event description. Though I was not present at this particular assembly, the PMAs I attended were similar in structure [3]

The event, as described in the handbook, started on the note of community representatives connecting climate crisis to tribal sovereignty, body autonomy, public health, and immigrant rights. In the next phase of the assembly, there were two presentations: first, highlighting the

[3] The three PMAs we have experienced are similar in structure. In this chapter, I choose (§2.2) to use an example that SMA has chosen to make public [130].

concerns of the Gulf Coast frontline, describing the oil and gas leaks and its impact on communities, followed by a discussion on connecting these local realities to global examples (Flint MI crisis, global draughts, etc.). In the following phase, as a part of the frontline assembly, small groups discussed questions such as: "how does oil/gas drilling impact your community? What would your community look like without oil/gas drilling? What could our communities look like with renewable energy? What should we do to ensure healthier communities in the next 90 days, in the next year, in the next 3 years?" Facilitators from each small group then reported back the "synthesis" from each group discussion to the large group. The group decided on tangible actions (e.g. organized actions toward local legislative changes in the Gulf Coast) to be taken in the community through another round of small group discussions. In the end, a list of action items was decided for the community, and each person selected 2-3 priorities they were willing to work on.

In addition to their central role in PMAs, the structure of synthesis and report backs are applied to other meetings of SMA as well—offline or online—where facilitators take notes and report back to the entire community. They recognize the need to inform the people absent in the room (both in the offline sense of annual PMAs and the Zoom calls) to give them an opportunity to contribute to the final decision and participate in the collective actions.

### 4.3.2 Technology Artifacts of SMA and Their Consequences

For a regional social movement with 118 organizations located all over the Southeastern U.S., the processes and practice of their politics require SMA to depend on several material resources like finances, political knowledge of members, volunteer labor, and also information and communication technologies (ICTs). While communities of social movements have long been dealing with material forms of resources like volunteer labor and finances, ICTs are relatively new in the realm of movement organizing. ICTs often enter the fabric of grassroots movements to serve functional needs. Although these functional needs existed before ICTs, these tools greatly expand what they can accomplish both in outreach and efficient day-to-day operations. Toward answering the sec-

ond research question, in this section, I will discuss the ways in which SMA uses and perceives ICTs for the purpose of their politics.

SMA has chosen several ICTs for day-to-day organizing and internal communication. Since members are located in different parts of the Southeastern United States, SMA depends heavily on *the video communication platform Zoom*, which they use for all of their online meetings. Additionally, they have *a website* that hosts resources on the history and philosophy of SMA as well as information on different organizations that form the movement. This website is hosted by MayFirst[4], a collective that strives to develop and maintain politically conscious technology. The website is also used to communicate monthly general assembly calls. SMA also maintains *a public Facebook page*, which is used to inform followers about their monthly meetings and to live-stream some of their events. Their decision-making process relies heavily on *Google Drive* and *Dropbox* for documentation and archiving purposes.

SMA has also designed several *handbooks* on movement research, most notable ones on People's Movement Assemblies [132], Movement Journalism [133], and Immigrant Rights [134]. These handbooks are freely available and are both digitally and physically distributed among different grassroots social justice organizations [132]. They are intended to make their movement practices accessible and reproducible in other spaces. Our findings reveal that the technology-practice of making movement artifacts accessible is a practice that SMA inherited from one of their anchor organizations Project South. As P6 notes,

> *"One thing that Project South believed was that nothing we create, and I think this was before the term open source had even been coined, but none of it would be copyrighted. The only thing we asked was that it be cited. Now that translates to creative commons, but that was something we've always practiced, in a technical sense. This is a tradition that SMA has also inherited." –P6*

Let us now look at a practical example of how these communication technologies are used in the practice of grassroots politics. A notable outcome from the annual meeting of SMA in

[4] `https://mayfirst.org/en/`

late 2017 was the inclusion of a Puerto Rican organization in the movement. At that annual meeting, representatives from a grassroots organization based in Puerto Rico shared their experience of organizing and recovering from the ongoing political and environmental crisis in the wake of Hurricane Maria, which struck the island in September 2017 [135, 136, 137]. SMA has been invested in organizing around climate disasters for several years, and although Puerto Rican organizations were not directly involved in SMA, the movement collectively decided that they wanted to support this organization in Puerto Rico.

Although this act of inclusion happened in a physical meeting, the practices that followed were deeply technological. In the months that followed, the governance council members had multiple video conferences over Zoom with the organization's representatives. The notes from those calls were recorded on a Microsoft Word document. The video recording of those calls and notes were reported back to the rest of SMA over emails. Finally, in 2018, SMA started planning a visit to Puerto Rico, strategizing which members within the movement who would be the best fit to visit. As P5 shares,

> *"Well we had to be careful to not let it become disaster tourism. All of us who went had experienced climate disaster in some way and had experiences of recovering from it as well. It is about knowing who these people are, reaching out to them. And allocating finances to fund their travel too because often the people who need to be in the room most do not have the means to be there." – P5*

Once the logistics of this event were arranged, the communications work team was given the task of making a graphic poster announcing their events across the southeastern United States, including the event in Puerto Rico. P5 and P1 share how designing the graphic poster (Fig.4.1) was both at once a technical and a political task.

> *"We wanted the graphic to say the story of inclusion of Puerto Rico. The map and the line connecting the states was an intentional choice to say that we see Puerto Rico as a part of the South." – P5*


Figure 4.1: A poster—announcing SMA organizing drive across the southeastern United States—was designed by a member of the Communications Work Team of the SMA. Among other details, the poster shows a map connecting different southern regions including Puerto Rico. SMA's collaboration with a Puerto Rico based organization had much important political significance, most importantly, the recognition that Puerto Rico is an integral part of the U.S. South. In this poster, the designer attempted to express the act of grassroots inclusivity acknowledging that a regional analysis of systemic issues of the South must include and center the experiences of Puerto Rican people.

> *"When so much of the disaster capitalism that is happening in Puerto Rico is rooted in exclusion of the place from rest of the US, the map makes a statement." – P1*

Finally, in the summer of 2018, several representatives from different organizations of SMA went to Puerto Rico and helped with political strategizing as well as with manual labor like planting seeds in their community garden. The group came back and reported on their experience and discussed the next steps over another Zoom call.

SMA's culture is rooted in political values, but the practice of grassroots politics has functional needs. All of the tasks that were mentioned in this section—keeping a record of people's experiences, reaching out to people, regular meetings about finances, booking travel, making a graphic poster, etc.— point to regular, practical tasks that are usually addressed with some form of technical intervention. It is for these technical tasks that ICTs become an essential part of the movement.

Although media technologies play a significant role in the practice of SMA's politics, the adoption of these artifacts manifests in various consequences for grassroots politics. While they

open new opportunities for communication, they also create new barriers for the inclusion of marginalized voices that SMA tries to achieve. My findings indicate that most of these "technology-related" decisions in the SMA are made by a group of only four people (including myself) who are identified as technically competent. This was because the communication team was seen as the group of people tasked to make these choices for the movement, even when the group themselves often felt uncomfortable with the discrepancies in the power dynamic that these choices entailed. The rest of the movement followed the suggestions of SMA's communications team. With time, ICTs became more and more pervasive in SMA's infrastructure. The more complicated it becomes to maintain these ICTs, the more distant members become from the technology. Technology, in the common understanding in SMA, *is a task for the younger demographic*. It requires *expert knowledge, steady access, and a certain amount of racial and economic privilege*. This results in a complicated relationship between the social and technical systems of SMA. As a member of the communications team and a participant of this interview study notes,

> *"There is just a lot of hostility toward technology."–P9*

For a community that is connected almost entirely via ICTs, these complicated sociotechnical realities have serious consequences for their politics.

For example, P3 wanted to get involved in the communications work team but technological access and ability were a constraint for her. The bi-monthly communications calls get announced via a Google group. She was not receiving the bi-monthly notifications of the meetings since she could not sign up for the group. She shares,

> *"I have been missing the notifications for your calls because I think my google group subscription is not functional, and I don't know how to fix it" —P3*

In my interview with her, she notes that although she likes technology she is often challenged by it and relies on the help of technically adept people in her life.

> *"I've always been in contact with a variety of younger people—they are like my nieces and my nephews. I have a couple of them who are really into technology and so they will*

*help pull me out when I mess up something on my computer or I'm trying to load some software and I do something. Or if I get my passwords all lost and confused. So I'm blessed to have the support of a couple of people who know a lot more about technology. " –P3*

P3 further shared her concerns about the role of technology in the grassroots movement as:

*"I think we have to be careful and that we don't overvalue technology and undervalue the importance of relationship building." –P3*

In a face-to-face meeting with P3, the communications workgroup helped P3 set up a Gmail account, and further signed her up on the Google group, which enabled her to get the notification emails. Across our observations, a myriad of small barriers like this accumulates to create surprising degrees of exclusion in practice.

I observed members struggle with similar issues throughout my action research. For instance, in a participatory workshop I conducted in the Mississippi Delta, participants discussed varied mediums of movement communications and the opportunities and challenges that come with choosing them. A younger person pointed out that they firmly believe in social media's power of "getting the word of movement out." An older person from rural Mississippi shared that most people in her neighborhood including herself have flip phones with unreliable internet connections. She further shared that online campaigns can sometimes make rural people feel isolated when the movement is also about them. In addition to technology access in rural vs. urban parts of the U.S. South, participants attributed this particular dynamic to age as well. Members shared that disparities in comfort with technology can sometimes lead to an "inter-generational gap" in the movement (this story is shared in further detail in Chapter 5 with my reporting of the workshops I conducted with the SMA). For example, the black and indigenous cultures many SMA members come from deeply value the wisdom of elders—their lived experiences of racism in the United States and beyond continue to inform the racial analysis of the movement [128, 138, 123]. However, in the current reality of movement organizing the elders (with some exceptions) often

feel disconnected from the movement due to their relationship with technology. Following that discussion, we listed the different mediums of communication in use by different communities the participants were representing, and how we can use online mediums in a way that does not undervalue the offline mediums of movement communications.

While ICT artifacts do in fact simplify movement-related tasks, my findings suggest that perceived technical proficiency has implications for the internal power dynamics of a movement. P7, a white historian of age 75, identifies note-taking as a task that she could take up as a white person in a space that is centered around people of color. While she used to take notes by hand in the beginning, she realized note-taking for the purpose of SMA's method of participatory decision-making requires a lot of technical freedom like copy-pasting, referring to outside knowledge resources like Wikipedia, being able to compress a 32-page long document to a 4-page summary, etc.

> *"I learned to type in eighth grade. We don't have to go through all of that, but you'll remember the reason, you'll always remember the reason. And that meant that technically I could take notes. Although at first, it was handwriting. Then eventually I discovered that having a laptop that I could take with me enabled me to be a part of a meeting where I don't fit otherwise. Because I had skills and tools that those spaces needed and I could offer them that." –P7*

P7's access to a laptop and ability to type quickly, along with her knowledge about the history of the US South, made her feel more comfortable taking an active role because she felt she had something valuable to contribute. P7's story further points to the fact that technical skills and access to ICT artifacts enable the movement of SMA to practice new organizing techniques. While P7 sees her note-taking as a service to the community, she recognizes that it also gives her a degree of power–her version of what was said is the official, archival version. P7 points out, note-taking in the context of SMA is not just typing up a conversation. It is an active work of interpretation, research, and analysis.

> *"Note-taking has to happen knowing that the concept, in the end, is the synthesis, that,*

> *which is not the same thing as just outlining or typing up. It's going to a new level of understanding that blends everything. It's like how [P6] always says "making a cake, you have the sugar and the eggs and the flour and then you mix them all together, but it's the heat that causes the chemical reaction so you have something different." And that's what the synthesis is supposed to be, the chemical reaction in which the notes are an essential element." – P7*

Technical skills, knowledge, and access to a tool all contribute to a level of functionality and efficiency that P7 embodies. It is therefore natural for SMA to want P7 to be "the note-taker" of the movement. But, P7 further shared her concern about how this runs the risk of centralizing the power of documenting the movement to one human being who already identifies to not belong to the center of the movement. P11 notes that she had the same concern with SMA's decision-making. She shares that she initially was concerned about the decision-making process is so tied up in the knowledge and skills of the synthesis—the knowledge and skills were then tied to specific tools associated with the process.

> *"Even though you're people who are skilled in doing it. You've got to have it be a number of people who do it or who know how to do it, and constantly increase that number" – P11*

SMA has been trying to "increase the number" of people who know how to use Google Drive with regular web-tutorials they organize over the video communication platform Zoom. But in our participation and observation of such web-tutorials, I saw that these efforts are not free of tension. To be able to successfully receive training on Google Drive, members would need to be proficient in Zoom or need to join those calls through some tool other than an ordinary cellphone. Many members, especially those from less-advantaged backgrounds, have simple cell phones rather than smartphones.

Furthermore, these ICT artifacts were chosen with varying degrees of analysis of their politics. Politics can be embedded in functionality, and one might also worry that the politics of the

organization that created a tool are expressed in its design. However, those politics are hard to access, as P1 notes:

> *"Zoom is relatively new. We were using FreeConferenceCall.com for years. I mean, who even knows their politics? We didn't even look, but it was more just like, we know this is functional. We know this is useful." – P1*

> *Some part of the Zoom account world is free, so people can download an app and then be part of it, but somebody's got to pay the subscription. We realized that if we raised enough to pay the subscription, and that equals out to easier to our most affected people, or older people, or people that we're trying to build a relationship with if that's an easier forum, we will take the cost out. – P6*

> *"The only encrypted form of communication that we have right now is on Zoom. I really made sure that we had that, and you can go play around with the encryption choices as well." – P5*

P6 also reflects on how the cost of value-analysis is not always financial. SMA has chosen more value-driven technology choices in the past. SMA's website is hosted by MayFirst—a radical technology collective whose values align with SMA's beliefs. However, the maintenance of their web platform has required a significant amount of coordination between MayFirst and SMA. While value-driven and inclusive in the strictly technical sense, this technical choice was not the most efficient. As P8 reflects,

> *"It slows down the process significantly, which makes it difficult to work with when all you need is to publicize the next general call through the website." – P8*

As P6 describes this conundrum between choosing an open-source solution and paying for a managed service,

> "So, when we look at something like a Zoom, which is an account that costs money, as opposed to some kind of open source technology, we sort of always have to weigh

> out. We don't do this super systematically, but we weigh out the number of resources and time that it takes to understand and work with open-source, versus the time it takes to just get a Zoom account." – P6

## 4.4 Envisioning a Grassroots Culture of Technology Practice

To summarize what I have shown with the findings in the last section, grassroots organizations strive to make use of ICTs to further their agenda. However, ICTs do not work comfortably for grassroots purposes and, in fact, sometimes end up distorting grassroots values. For example, "technically competent" members end up having more power because of their knowledge about the technical artifacts. Technical competence is further associated with younger age, cis male gender, whiteness, socioeconomic privilege, and other normative characteristics. For a movement that is run mostly on volunteer capacity and has to overcome many systemic barriers, the choice of ICTs is driven by functional qualities with varying degrees of analysis of the politics of these artifacts. Moreover, when SMA has tried to make technical choices (Zoom, Website, etc.) with some form of value-analysis in mind, the choices have come with hard trade-offs—like finances, usability, technical labor, etc. I argue that the complex sociotechnical reality of SMA is indicative of the reproduction of cultural values of the chosen ICT artifacts. Further, the tension within the SMA is a result of two contrasting technocultures coming together: the *technoculture of inclusivity in grassroots movements* and the *technoculture of exclusion in ICTs*. I graphically represent this system in Fig. 4.4.

My ultimate goal was to find ways to resolve some of the conflicts between the two technocultures in an effort to design a technology practice that truly centers grassroots culture. In the view of technocultural theory, this conception of a grassroots culture of technology questions the expert culture (norms of design set by experts of technology) that ICTs currently emerge from. Toward this, in the sections that that follow, I first contextualize the technoculture of the ICTs used by the SMA using the overall framing of technoculture. Second, I establish SMA's existing culture as an emerging technoculture of grassroots inclusivity. Third, I look at the contentions

of the technoculture of ICTs with the technoculture of grassroots inclusivity. I posit that the values, practices, beliefs from ICTs' technoculture often bleed into the technoculture of grassroots inclusivity, leading the latter to show symptoms of systemic exclusion. Finally, I offer suggestions on how the relationship between ICTs and grassroots beliefs and practices can be harmonized toward a more equitable culture of technology practice.

### 4.4.1 Technoculture of Systemic Exclusion in ICTs

SMA's sociotechnical realities have interesting parallels with the historical studies of technology conducted by Arnold Pacey in his book "The Culture of Technology" [101]. Pacey studied the evolution of the snowmobile and showed how the same technological artifact led to different cultural implications for different places in the world, sometimes even leading to socially inequitable outcomes. The technocultural theory provides a helpful roadmap through which technology can be questioned in its totality, i.e. as a triad of artifacts, practices, beliefs leading to the formation of a technoculture. I describe more on Pacey's work and technocultural theory in Chapter 1, along with a detailed note on what role his view of technology has played in my understanding of grassroots technology-use. I will be using Pacey's triad of technoculture (Fig. 2.1) as a lens to understand the technoculture of ICTs—specifically by connecting that triad to contemporary studies of technology in CSCW and broader HCI.

Sasha Costanza-Chock explores how the culture of exclusion is often embodied in and reproduced through the design of technological artifacts. [108]. Technology—both in terms of designed artifacts and the process in which they are designed—embodies and reproduces the values of "the matrix of domination" (white supremacy, heteropatriarchy, capitalism, and settler colonialism) [139, 108]. Although design is seen as a domain of paid experts, these paid experts—at least in the U.S. Silicon Valley design firms—are primarily white and Asian cisgender men. Women hold 25% of these jobs; Black women hold just 3% of computer programming jobs, and Latinas, 1% [140]. Although companies are trying to diversify their workforce, "diversifying the software workforce, unfortunately, will not automatically produce a more diverse default imag-

ined user" [108, 86].

Normative exclusions through technology are an important area of current HCI and CSCW research. CSCW researcher Os Keyes points out how the use of automatic gender recognition technologies has serious implications of excluding trans and non-binary people [141]. HCI researchers Schlesinger et al. observed similar patterns of gendered exclusion in HCI [142], and further observed racial exclusions that happen through chatbots [88]. As past research shows, these raced, classed [85], and gendered exclusions perpetuated via technological artifacts have serious consequences [143, 77, 144, 145]. The CSCW community has also purposefully designed against exclusion [43, 85] and studied emancipatory cultures of technology-practice [43, 146]. These studies are different in their methods and motivation but they all ultimately show that technology can and should be intentionally designed with values that adequately question systemic injustices [78] (based on race [88, 144, 86], gender [43], class ( [147, 85], etc.) that pervade our lives. I translate my knowledge of ICT's culture of systemic exclusion in the following into the triad of technoculture in Fig. 4.2. This view helps with de-blackboxing the complex cultural phenomenon of ICTs. Opening the blackbox of technology has been a necessary step in the cultural and political analysis of technology suggested by Critical Informatics. For us, in this paper and in our ongoing work with SMA, it works as an analytical tool that lets us look beyond the utility of popular ICTs.

### 4.4.2 Grassroots Inclusivity as an Emerging Technoculture

Inclusivity as sociocultural value has been interpreted in different ways. In the dominant discourse around the (Western) workplace, inclusivity is broadly understood as synonymous with diversity of identities [140]. Inclusivity has also often been tokenized in social settings beyond the workplace [148]. Civil Rights leaders spoke about people of color being included as a symbolic effort to have a representation of people from marginalized groups. However, in practice, they had little to no administrative power over making decisions that would actually affect their lives [128].

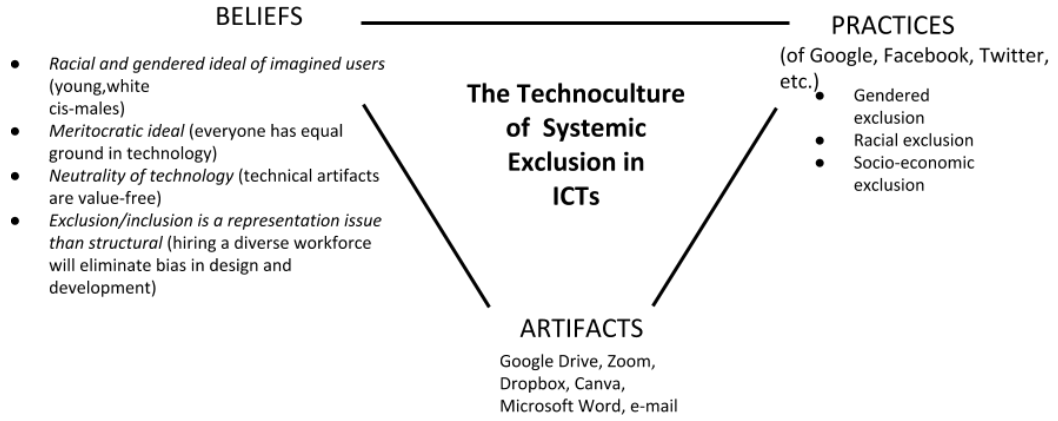



Figure 4.2: Adopting Brock's reformulation of technocultural theory [86], I unpack the culture of ICTs. With this formulation, we see, that the commonly used ICT artifacts pervading our digital existence are in fact products of a complex technoculture. The means of ICT production—predominantly driven by beliefs and practices of racial, gendered, classed exclusions—are structured in the design of the artifacts.

SMA actively challenges this version of inclusivity. As P1 points out, the common views of inclusivity tell us that the problem of systemic exclusion can be fixed with equal representation of marginalized people in power. While representation matters, according to SMA's beliefs, inclusivity cannot be sustained without a transformation of the power structures that enabled such systemic exclusion for centuries.

This belief is translated to novel *practices* of inclusivity such as the Peoples' Movement Assembly (PMA). The idea of the PMA is born out of the realization that if we are to demand the kind of democracy that serves the most marginalized of the society in an equitable way as it would serve the wealthiest, then we need to rethink the structure of our democratic practices, too. And so, with an analysis of voting and other democratic decision-making tools in mind, PMAs were designed as a radically inclusive alternative that questions the very design of parliamentary democracy in the United States. These *beliefs* and *practices* of inclusivity require the support of certain communication *artifacts*—both ICTs and non-digital artifacts. Grassroots inclusivity can therefore be conceptualized as:

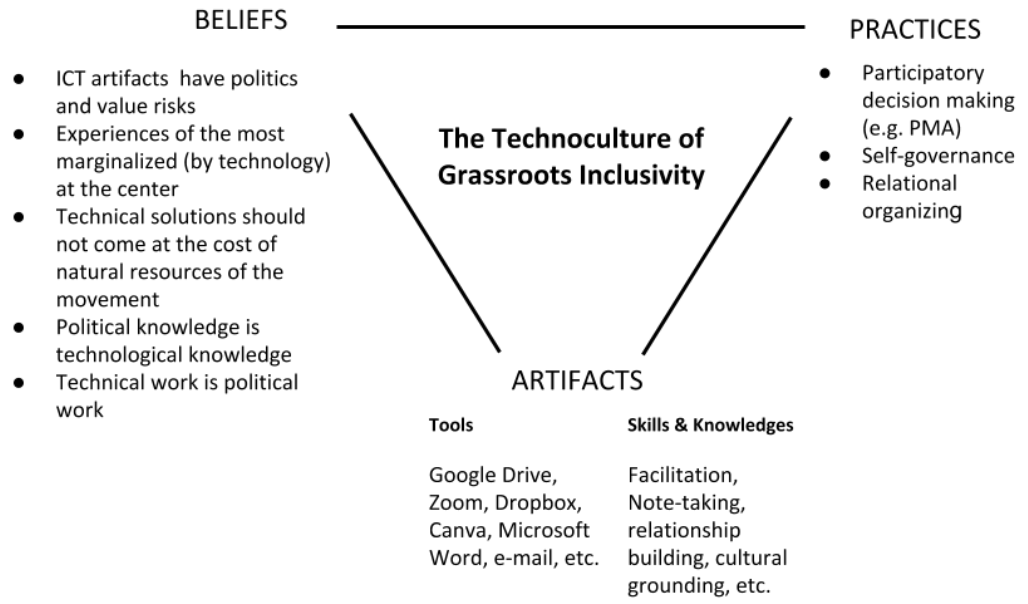



Figure 4.3: SMA's culture has shown to have set beliefs, practices, and artifacts, which leads us to present SMA's culture as an emergent technoculture of Grassroots Inclusivity. While this formulation comes from our analyses of SMA, I offer the technoculture of grassroots inclusivity as a more generalized framework that can be used to build a technology practice committed to questioning power and systemic oppression.

| An emergent technoculture that strives to include marginalized voices in the uses of technology to resist systemic oppressions, while simultaneously working toward dismantling the broader structures that lie at the root of marginalization. |
|---|

Using my findings, through the lens of technocultural theory, the idea of grassroots inclusivity can be expressed as the triad of beliefs, practices, and artifacts as shown in figure 4.3. This frame is useful in several ways. First, this representation can be seen in contrast with that of the dominant technoculture of ICTs in figure 4.2. Making use of this contrast, in §4.4.3, I argue that the ICT artifacts used by SMA represent the intersection of these two triads (figure 4.4), leading to an uneasy fit for these artifacts within a grassroots culture of technology practice. Second, I argue in §4.4.4 that beyond the specific application in this paper, this framing can be used to make sense of technology-practices in HCI in general—i.e., beyond grassroots movements. Finally, though ICT artifacts form a small part of the rich and complex technoculture of SMA as represented in the triad, their uneasy existence in the grassroots fabric engenders a demand for a

shift away from prioritizing established expert values in technology practice, which I discuss in §4.4.4.

### 4.4.3 The Culture of ICTs against Grassroots Inclusivity

What happens when two separate technocultures with significant power differentials collide? My findings show that the ICTs chosen by SMA resist their practice of inclusivity in significant ways. As technocultural theory suggests, we can never separate technology from the practices it promotes and/or resists. Cultural experiences with technological artifacts can therefore provide us with useful insights on the fundamental value-systems of the technology. Following Pacey's lead, if we were to compare the two cultures of technology—the culture of ICTs as shown in Fig. 4.2 and the (techno) culture of grassroots inclusivity as shown in Fig. 4.3—we end up with the fact that ICTs are situated at the intersection of two contrasting cultures of technology within SMA (as shown in Fig. 4.4). ICTs' positionality in the SMA, as well as the design of these artifacts, both make ICTs our objects of concern in this paper. I argue that the practices and beliefs embodied by the ICTs sometimes reproduce within a grassroots social movement. Though members of the SMA are "users" and not the producers of these artifacts, "mere" use of these artifacts, produced under a different technoculture leads to an erosion of the technoculture of grassroots inclusivity that SMA members aspire to. Furthermore, as Critical Informatics scholar Andre Brock reminds us [86] in his reformulation of Pacey's technocultural theory, even when we are considering a site of use far removed from the site of production, we cannot ignore the technoculture that is associated with the means and the site of production of the technological artifact.

For example, for a movement overburdened with political analysis, SMA has had varying degrees of success in evaluating the politics of ICTs prior to adoption. There is also a general expectation within the movement for technologies to be value-free, efficient technical solutions for their problems. While this perceived neutral quality of technology is in itself a *reproduction of the value-neutral position* taken by the makers and marketers of ICT artifacts (Facebook [149], Twitter [150], Google), adopting ICTs with less consciousness of the values they possess makes

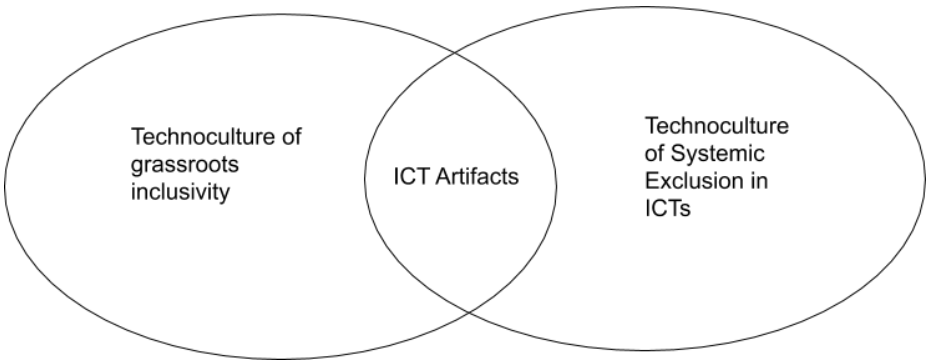



Figure 4.4: Comparing the culture of ICTs in Fig. 4.2 and technoculture of grassroots inclusivity in Fig. 4.3 we see that, in the sociotechnical system of the SMA, ICTs are situated at the intersection of two contrasting cultures of technology. This makes ICTs more prone to reproduce the values from technoculture of exclusion into the technoculture of grassroots inclusivity, which further leads to the inequitable outcomes described in this paper.

them even more prone to reproduce their existing values in a community.

I note more of this reproduction happens with values like *functionality and efficiency.* The culture of ICTs is often based on the assumption that efficiency is correlated with the value of *productivity* [151, 104, 152]. Therefore, the most efficient person in the room is the person who knows the technical artifact in use best and can get the task done fastest [151, 152]. Adopting ICTs leads to a similar belief within the SMA landscape. Their choice of the same few people in the roles of facilitator and note-taker is indicative of productivity-driven choices. Functionality and efficiency, however, have different meanings for a grassroots social movement than they do for the makers and marketers of the ICTs used. To form a robust sociotechnical system for grassroots social movements, designers and scholars of ICTs need to further examine how we can integrate chosen technical solutions with adequate cultural and organizational practices that embody functionality and efficiency in the grassroots sense. If we look at the culture of SMA, we see that their understanding of a functional and efficient movement is not about being the simplest to manage, or the quickest in organizing a protest. The sociopolitical goal of SMA is to include the most marginalized voices, and in doing so, make decisions that improve the lives of the most marginalized. In P1's words, that is accomplished by "moving at the speed of trust." Adopting tools like Google Drive enhances some needs of decision-making in the movement like documentation and

archiving while hindering the more sociopolitical goal of distributing the decision-making power to the most marginalized.

Moreover, the values of functionality and efficiency in the production of ICTs, as prior work shows, are highly *gendered [153] and racialized [154, 152]* values. The primary workforce from which these artifacts emerge is white and/or Asian cis-gender males [140]. Proficiency in technology therefore is associated with whiteness [154, 152, 108, 86], masculinity [108, 98], socioeconomic status [85, 108, 86], and, to some extent, specific ethnicities [140, 108]. SMA's sociopolitical culture organically resists such exclusionary practices, SMA being a movement primarily led by and centered around people of color. Yet, if we look at who is believed to be technically competent among just our interview participants it would be P5 (Multi-racial, 24), P6 (white, 41), P7 (white, 75), and P9 (white, 28). The communications work team of SMA that the first author joined also shows a similar racialized character. This association of technical efficiency with whiteness, socioeconomic privilege, and younger age is indicative of the gendered, classed, and racialized means of ICT production that prior work points out [140, 155, 156, 85, 141, 108].

Finally, the culture of ICTs believes that social and political problems can have technical solutions [104, 61, 152]. For example, the ICT artifacts used by SMA such as Google Drive and Dropbox are made and marketed as technical solutions for the social needs of collaboration and cooperation. As a more alternative technical solution, SMA's choice of hosting their website with MayFirst was also meant to be a more inclusive choice of a technical artifact. All of these technical solutions fail to account for the more systemic exclusions that the politics of grassroots inclusivity fundamentally question. If SMA's sociotechnical reality is any indication, we need to realize that problems that arise in the grassroots fabric *do not* have strictly technical solutions. In fact, adopting communication technologies as technical solutions can sometimes obscure our vision of the more structural gaps that may exist within a community. For example, the use of Zoom made it possible for SMA to have regular calls which played a crucial role in creating a sense of community for their regional movement. However, these calls are typically announced over emails and Facebook posts—tools that many SMA members have limited access to. This has the potential

to exclude the most marginalized members of SMA who should otherwise be at the center of the movement.

### 4.4.4 Lessons from the Conflicting Technocultures

Technocultural theory suggests that cultural conflicts in sociotechnical systems can highlight important truths about the fundamental assumptions underlying the design of technical artifacts. From the conflict between the technoculture of grassroots inclusivity and the technoculture of ICTs, I infer important lessons about the future of ICT artifacts wanting to support inclusion (and other social values), as well as grassroots communities wanting to form their own culture around technologies they have little control over. The problems I highlight in this paper need to be resolved from both ends of the cultural spectrum. CSCW and HCI (designers, practitioners, institutions) have a responsibility to align and resolve some of the fundamental differences of this field with marginalized technocultures, leading to more value-aligned ICTs. On the other end, the marginalized technocultures will be exercising their voices in many ways—most importantly by holding the ICTs they use accountable for the values they promote. The following are some suggestions grounded in the findings and analysis of this chapter.

*Expanding the Vision of Inclusivity in CSCW and broader HCI*

The means of technology production (e.g., discriminatory beliefs and practices in the technology workforce) have several consequences beyond the lives of workers involved in the making of technology. The means of production of CSCW technologies shape the values embodied in, practiced, and reproduced through CSCW artifacts. Thus, we end up with value-laden technologies with serious implications for power and marginalization in the lives of "users" of these technologies. In what follows, I argue that the means of CSCW technology production can be evaluated with our formulation of the technocultural framework of grassroots inclusivity.

Significant efforts have been made to make CSCW a diverse community, with the hope that that diversity would also be reflected in the artifacts and practices of the community. However,

as past work points out, inclusivity often gets tokenized and limited in the discourse of representation [142, 88, 141, 108]. With the conception of "grassroots inclusivity" as a distinguishable practice from the more tokenized version of inclusivity, I mean to provide a theoretical framing of inclusivity that is grounded in lived experiences of a large regional grassroots social movement.

I posit that a substantive change is needed in how CSCW technologies interpret issues of inclusion, exclusion, marginalization, etc. Toward a sustainable shift, CSCW and HCI need to be more grounded in structural analysis of oppression, i.e. moving our investigation from "who is missing from technology discourse" to "why are they missing? How are they missing? What needs to be transformed structurally in order to dismantle this pattern of exclusion?" Through my description of SMA's practices and beliefs around inclusivity, I suggest that grassroots inclusivity is a conceptual framework that can help CSCW, HCI, and other communities work towards centering the marginalized experiences of technology. For example, building on the practices (Fig. 4.3) of grassroots inclusivity, CSCW designers, researchers, and practitioners working with/for marginalized experiences of computing (through communities they work with, or have lived experiences themselves [157]) can engage in critically reflecting on values carried through technologies they use, make, and study [3].

Aligning the technoculture of CSCW and broader HCI with grassroots inclusivity will have to be a continuous practice—it sure has been for me, as I will share more in the next two chapters. I suggest two possible methods and practices for CSCW designers and practitioners in the following subsection.

*Expanding Design Practices in CSCW and broader HCI*

My call for aligning the two technocultures echoes past research [4] and further points to the need for a kind of value-sensitive design work through collaboration that focuses on outcomes beyond the design of technical solutions with communities. More practically, this would mean that designers and researchers doing community-centered design would stay sufficiently involved in the community before and after creating a technical artifact for and with them. This would enable

researchers to not only study values as lived experiences of others but also of lived experiences of themselves as members of the communities being studied.

Close and holistic collaboration can uncover that a strictly technical solution for the problem of inclusivity, or any other sociopolitical value for that matter, does not exist. As we have seen in this chapter a strictly technical solution will insufficiently address the structural exclusion that is often at the root of such problems. In reality, designing a culture of technology practice is messy work, and we, as designers, need to embrace that messiness.

For example, one possible way to capture the messiness of designing a culture of technology practice is to consider that every community is heterogeneous and even the seemingly non-hierarchical communities will often have hidden power structures [49]. Questioning technology with a technology-practice would further acknowledge that the technical solutions we create may unequally favor community members in different power positions. The task of design therefore entails asking hard questions about whether the technical solutions we create possess the risk of becoming a solution that works for a selected few in the community. By identifying the members for whom the technical solutions do not work, and further centering their experiences, researchers can begin to explore effective sociopolitical practices that can accompany more technical solutions. Together, this will lead to a more politically integrated technology practice. My suggestion for making value-driven design a more ongoing, reflective process rather than a one-off event that produces stabilized artifacts embodying desired values, echoes a vast amount of work done in social and critical informatics. It is particularly aligned with the work of Orlikowski and her call to studying technology-in-practice as "identifying types of structures of technology use should help both researchers and practitioners better understand how and why people are likely to use their technologies and with what (intended and unintended) consequences in different condition" [158].

Sustaining a culture of value-sensitive technology practice will also mean that we stay vigilant for the reproduction of values of technical solutions. These technical artifacts could be from managed services like Google Drive or self-hosted solutions. CSCW researchers and designers in

this space will have to try to involve the community to iteratively design around such reproductions. More concretely, this would entail having open conversations with community members about the politics and value-risks of technical solutions we collaboratively create. There is a need to ensure that the communities stay aware of the possible means of reproductions of values, and further hold technical systems and their designers accountable for the values they promote.

*Practicing a Grassroots Culture of Technology*

There needs to be a change in the way we think about values in technology. While that can be a long-term goal for both makers and users of technology, in the meantime, resolution of the conflict between the contrasting technocultures of grassroots inclusivity and ICTs can be done by de-centering the technoculture of ICTs in this arrangement. This would mean being conscious of the ways ICTs tend to center the hegemonic values they come with, and then actively resisting such pattern with grassroots practices to create a truly grassroots culture of technology practice. In my work I did with the SMA following this phase of inquiry (discussed in the next chapter), I build on the following principles toward that culture.

**Consciousness of the value-risks of ICT artifacts.** A core belief of grassroots organizing is consciousness: knowing and acknowledging the lived experiences of systemic oppressions. Similarly, they can leverage the lived experiences of technical artifacts centering the experiences of those who identify as uncomfortable with ICTs.

**Inclusion of varied technical knowledge and resources within the movement.** Next, a grassroots technology-practice should carefully reflect on the social, cultural, and organizational resources that different organizations and individuals bring to the movement. For example, in SMA, an organization brings the knowledge of spiritual and cultural grounding, and another organization brings the skill resource of union organizing and an understanding of class relations in the Southeastern U.S. These seemingly non-technical resources should be considered as technological resources along with ones like knowledge of cybersecurity or skills of making a graphic poster. This will also re-emphasize the belief that technology used by a movement is not separate

from a movement's character. Therefore the skills and resources that shape a movement also have the power and ability to shape our technology-practices.

**Careful allocation of resources.** In a grassroots technology-practice, the social and cultural resources should be mindfully allocated so that technical resources do not come at an unreasonable cost of more natural resources like volunteer labor. Allocation of resources should be a conversation among all members, not just the technologists in the room. Costs can be hidden– using a particular piece of software or collaborating with another organization's platform may be more cumbersome than initially understood, so decisions need to be re-evaluated in light of new information.

**Participatory decision-making about technology.** Finally, a core practice in grassroots social movements is the participatory decision-making process that involves members with varied experiences of systemic exclusions in every step of determining the future of the movement. All the other suggestions I made above would not materialize if people with different experiences and access to technology do not make decisions about the technologies together.

## 4.5 Conclusion

Imagine telling a grassroots organizer thirty years ago that in the future they would have low-cost or even free access to audio and video conferencing, shared document editing, and the means to publicize events to thousands of people with a few mouse clicks. They would, rightly, be amazed and excited. The existence of these technologies is what makes a regional movement like SMA possible. Technology has come a long way toward helping the voices of people be heard.

However, these technologies also have unexpected consequences. It doesn't much help to have a meeting via audio conferencing so people without computers can attend if the meeting is announced via email. Small barriers like this accumulate, making true democracy hard to achieve. Even grassroots organizations that rank democratic participation of the marginalized as a top value struggle to be fully inclusive in their daily practices. The consciousness of the problem is an important first step, but not a sufficient one, since a careful analysis of available technological

tools often leads to hard trade-offs.

I suggest that there is work to be done in CSCW and broader HCI toward critically examining both the fundamental values we produce and market our technologies with as well as the consequences of such value-laden technologies. As a possible shift in the means of ICT design and production, I suggest CSCW and HCI designers draw from the culture (practices, beliefs, artifacts described throughout this paper) of grassroots inclusivity—a vision of inclusivity grounded in a structural analysis of exclusion. While I envision a more integrated technology practice in CSCW (and therefore more value-aligned ICTs) that accommodates grassroots needs, I argue that grassroots movements, too, have a role to play in making such an integration happen. Thus, I call for a localized culture of technology practice in grassroots communities, that is committed to holding the cultures of ICT accountable for the values they embody and promote. I envision that a grassroots culture of technology practice will be rooted in the grassroots analysis of systemic exclusion with a continuous effort to include and center the marginalized voices and experiences with technology. In Chapter 5, I will share how I have been doing so in the SMA.

# CHAPTER 5
# DESIGNING A GRASSROOTS TECHNOLOGY PRACTICE WITH A SOUTHERN MOVEMENT

## 5.1 Introduction

Technology, as we have come to know it through recent waves of HCI, can be conceptualized beyond permanent value-laden artifacts [159, 103, 158, 98]. For instance, CSCW research urges us to understand technology "as materials whose stability relies upon the continuous reproduction of their meaning and usefulness in practice" [160]. Engaging with such theoretical works in the fields of CSCW, HCI, Social and Critical informatics, and history of technology (§2.3.2)—in Chapter 4—I committed to following a framing of technology practice that takes into account the social, cultural, and organizational meanings of technology. Additionally, in Chapter 4, my empirical work led me to *envision* the idea of *a grassroots technology practice* that grounds their ICT-usage in grassroots values and liberatory goals. In this chapter, I share my insights from *designing a technology practice*. More specifically, I report on what it has meant for me as I have contributed to the design of a grassroots technology practice in the large-scale regional grassroots social movement of the Southern Movement Assembly (SMA).

To reiterate some additional context from chapter 4 that will help make sense of the work that I report on in this chapter, SMA's technoloculture was indicative of a conflict between two contrasting technocultures: technoculture of grassroots inclusivity and technoculture of exclusion in ICTs. While their goals were of radical inclusivity of marginalized people's voices in the movement, the culture of ICTs they had to rely upon made it fundamentally difficult for them to achieve it.

Avoiding popular ICTs and the culture of Big Tech they represent may not be pragmatically possible for these movements. Even so, as CSCW designers and researchers we can help support

community organizations i) in being critically informed of how popular ICTs may be affecting their movement's culture, and, ii) in designing a practice of ICTs that is grounded in resistance and accountability toward the broader culture of ICTs. In this chapter, I share how I have approached both of these goals with a process rooted in solidarity with communities marginalized by hegemonic cultures of technology.

In designing technology-use with the Southern Movement Assembly, I stayed away from interpreting technology-use as an appropriation of complete artifacts. Rather, I saw this task as first and foremost, *understanding technology-use as an enactment of structures* associated with a community and its people. Second, I wanted to understand their *beliefs around artifacts separately from their beliefs and practices around ICTs*. Finally, I concentrated on *shifting the technology practice toward the enactment of relational structures* with the same ICTs. Approaching these tasks required a sociomaterial intervention [52]. As Barad notes, this is "about being accountable to the specific materializations of which we are a part of. And this requires a methodology that is attentive to, and responsive/responsible to, the specificity of material entanglements in their agential becoming" [161].

Toward the first objective of understanding technology-use as an enactment of structure, in §5.3.1, I report on three movement communication workshops (MCWs) I conducted in Mississippi, Georgia, and Alabama. Facilitating critical conversations about technology and their experiences of ICTs was a constant goal for all three workshops. Two out of three workshops happened as a part of a larger SMA event in rural towns of Mississippi. This was to make sure that we discuss issues of ICTs in the same space and context as other societal issues were discussed in. Further, I wanted to take these workshops to the margins instead of asking the marginalized people to come to an urban location to discuss technology. The workshops revealed the specifics of the structural experiences of marginal users. It is one thing to have an abstract understanding of the fact that ICTs reproduce oppression (which is what I established in Chapter 4), and a completely different exercise to uncover *why* ICTs can reproduce exclusion even in these spaces that question power regularly.

While the workshops continued to inform me in understanding SMA's relationship with artifacts beyond ICTs, toward this second objective, I further co-designed both a physical and digital *handbook of movement communication*—responding to a material need pointed out in the workshops. The material exploration that goes into making a culturally meaningful artifact helped me see both what a technology artifact can accomplish in a community, as well as, the limitations to which artifacts alone can help shift practices. I report on that experience in §5.3.2.

Finally, in §5.3.3 I share how I co-designed procedural changes in the community that responded to the objective of enacting a relational structure of ICTs. In this step, too, workshops (especially the third workshop) played a key role.

In what follows in this chapter, I first discuss the details of data collection and analyses. Next, I shared the findings from the three categories I mentioned above. Finally, I analyze my findings from designing a grassroots technology practice and extract broader lessons for designing technology practices of resistance and accountability.

## 5.2 Data Collection and Analysis

The data collection for this period I report on in this chapter followed the overarching guidance of action research (§2.2). The specific research tools I made use of consist of fieldwork, participant observations, workshops, and iterative design. In what follows, I describe the methods in further detail. In January of 2019, I discussed a detailed plan of action with the governance council of the SMA preceding a conversation on specific research questions that would be worth exploring for all parties involved. This plan—shared in the form of a shared document—included participatory workshops across the rural South to gather more experiences and knowledges of technology use as well as the iterative design of a handbook of communications that can be distributed both physically and digitally.

### 5.2.1 Field work, ethnographic observations, participation notes

I kept detailed field notes and observations from the first time I attended an SMA event in 2017. In writing this paper, I took all of my field notes into account starting from October 2017. Although I did not join this community as a researcher, I was already invested in the grassroots relationship with interactive technology, and attending the SMA event was an important event in that quest. While these notes were taken (with their consent) before a time the specific research question was set in collaboration with the movement, looking back at it has been helpful. Afterward, the field notes were taken more systematically [162]. To minimize the insider bias that close participation can often lead to, I took detailed notes of events, conversations, decision makings, etc. that were happening as they were happening; i.e. these notes had minimal interpretation involved from me. Later in the day, after coming back to my own accommodation, I would jot down some interpretations.

### 5.2.2 Participatory workshops

As previously mentioned, one of the means of participation as well as data collection for this research was through the workshops that I organized as a researcher leading the communication working group. With the uncovering of politics of seemingly technical events like registration counts (i.e. low registration count from rural people with low internet connectivity) and subsequent reflections on what that meant for the movement, it became evident that there was a significant disconnection growing between the rural and the urban population of the movement. The workshops were a way to both find out why and how that was occurring as well as gathering the ways in which these areas could be brought back at the center of the movement. The workshops took place as a part of the SMA events and community meetings in Mississippi, Alabama, North Carolina, and Georgia. An important consideration at this stage of choosing locations and contexts of the workshops was to take these discussions to the place where they were needed the most—these places were also often the places that were missing from conversations about the technology experience of the movement. Throughout section 5.3, I describe some highlights from

three of these workshops, referring to them as movement communication workshops (MCW). The three workshops described in this chapter are MCW1 that took place in Sunflower County, Mississippi); MCW2 in Atlanta, Georgia; and MCW3 in Mobile, Alabama. I share more of the logistical details about these workshops in Table 5.1. Further, in this same table, I share the research questions that motivated each of these workshops along with an overview of outcomes. These details are woven into the findings and analyses shared in this chapter.

The workshops had different designs in different instances of these events—designed particularly according to the needs of places where they were taking place. I share the specific structures and agendas for each workshop in Tables 5.2, 5.3, 5.4. Typically lasting for 2-4 hours, these workshops would start with a grounding exercise—a standard practice of the movement. We would then have guided discussions with three phases: *consciousness*, *vision*, and *strategy*. This structure was inspired by the existing practice of the Peoples Movement Assembly (PMA) which I discuss in detail in the last chapter [132]. Participants sat in a big circle (which led these workshops to be sometimes known internally as "communication circles") with standard materials used in these workshops being: flip-charts, markers, post-its, individual worksheets. I co-facilitated MCW1 in Sunflower County, Mississippi, and wrote the agenda for the workshop with the guidance of an established organizer of the SMA as her co-facilitator. The workshops held in Atlanta and Alabama were organized by me alone with support from other members from SMA. That is to say, I wrote the initial agenda for these two workshops, and the agenda was then evaluated by other communication team members and a representative from the leadership. I took up the facilitation responsibilities. Facilitating the workshop entailed taking high-level notes on the flip chart as the conversations were happening in each phase of the workshop. In the *consciousness* phase, the experiences of particular localities are gathered—participants would be encouraged to speak about the problems they were facing in their own communities around ICTs. This was then followed by gathering consciousness about the tools they were using—what their politics meant to the participants' lives, what values they embodied, who were these tools ideally made for, and how were they being appropriated for the movement's purpose and why. Consciousness was a

phase dedicated to a holistic examination of the existing relationships between movement members and the information technologies of use. In the *vision* phase of the workshop, participants would typically go through the consciousness list and share their thoughts and desires about what a collective vision of a communication infrastructure might look like in the interest of the whole of the South, or at least for the states they represented. Next, using the flip chart's record of the previous two phases, collective *strategies* would be formed. Finally, the facilitators synthesized the outcomes of the workshop and shared what the next steps would entail. Every workshop also discussed outcomes from previous workshops and the ultimate goal of constructing a more critical technology practice.

### 5.2.3 Iterative design

The artifact(s) I created with the SMA were almost always designed iteratively. Iterative design is a cyclical design process that consists of repeating sequences of collecting user feedback on a designed interface, evaluating the feedback, and subsequent refinement of the interface based on learnings from user feedback [163]. In this chapter, I talk about one of the artifacts we created in the span of our collaboration—the handbook of movement communication. The version of the handbook I present in Section 5.3.2 is the first iteration of its design. In the annual meeting of 2019, I took the physical prototype to the field to get initial feedback from the community members. The handbook, in its current iteration, became an integral part of how the practices in the meeting were shaped in the end. The digital version of this handbook has also been hosted online and has also been used by the community in its current iteration. In future work with the SMA and other grassroots movements, I wish to keep adding to this iteration toward integrating this artifact into the overall grassroots culture of technology practice.

### 5.2.4 Evaluation

I shared the principles and process of evaluation I followed overall in my work in §2.2.4. Throughout the iterations of design—of the workshops, artifacts, and community procedures—I fol-

Table 5.1: Details on three Movement Communication Workshops (MCWs) conducted in the rural towns of U.S. South

| Workshop | Research Questions | Location | Participants | Outcomes |
|---|---|---|---|---|
| MCW1 | • What are the perceptions of ICTs in the rural communities of the movement?<br>• What are some barriers of entry that lead to low participation from rural organizations?<br>• How do they envision the future culture of technology practice? | Sunflower County, Mississippi | 15 | • Identification of obstacles related to technology access, ability, and expertise in the movement (§5.3.1)<br>• Identification of the need for self-reflection among the technology experts in the community (§5.3.2) |
| MCW2 | • How do technology experts in the movement perceive their positionality in the movement?<br>• What do they imagine their roles to be in a more equitable practice of technology in the movement? | Atlanta, Georgia | 7 | • Unpacking of what participants' expertise meant for the movement (§5.3.2)<br>• Determining desired meaning of technology expertise (§5.3.2) |
| MCW3 | What does it mean to bridge the gap between the physical and digital resources of the movement? | Mobile, Alabama | 21 | • Co-developing the framing of "decolonize technology-use" as a future movement goal 5.3.3)<br>• Identifying the need and initial plans for a movement communication handbook (§5.3.2) |

lowed the grassroots tradition of *ongoing reflection as evaluation* [2, 33, 123]. This was a decision we collectively made when establishing a research partnership with the SMA. The leadership believed that the process and the outcomes from this research could be routinely examined much like the rest of the actions conducted by the movement [31, 132]. Further, as I note in §2.2.4, I committed to staying accountable to this community and its people for the foreseeable future thus committing to a long-term relational and affective culture [6] of evaluation and reflection of my actions.

### 5.2.5 Analysis

At the time of analyzing my data for this chapter, I gathered all of the data on technology-use by the SMA collected by various means. This included my field notes and participant observations since October 2017, transcriptions of some workshop conversations I was able to record with permission from the participants, the data from workbooks distributed in the three workshops, facilitation notes, notes, and feedback on the different iterations of the design of the handbook, design reflections I had done through the iterations.

The techniques of analysis I used were somewhat different for the two phases of my action research with the SMA: for the data collected from 2017 till the time I formally began my research with the SMA in 2018, and data collected from late 2018 through late 2019. I did a line by line coding of my field notes from the first year when notes were not taken as systematically with the research questions in mind (the choice of informal note-taking is explained previously in this chapter; also see §2.2 for details on ethical considerations related to this choice). After doing line by line coding of a selection of my data, I let some themes emerge from the data sources of these initial days of work.

Since forming the research questions in late 2018, I began jotting down interpretations within twelve hours of collecting the data—this is primarily to record and analyze the data from the various positions of distance [51]. This technique is used in ethnographic work in various fields [47, 51], and I found it to be particularly helpful as the intensity of community involvement increased

over time. This method worked for post-workshop reflections as well since the workshops were not fully audio/video recorded and being the facilitator of the workshops I could not take real-time notes other than the visual mapping of conversations I did to keep facilitation on track.

Combining high-level codes and themes from the first phase with interpretations from the second phase, I applied inductive analysis to generate the concepts reported in this chapter [46]. These concepts were further iterated on with the framing of "technology and/as practice (§2.3.2)" in mind.

## 5.3 Findings: Co-Designing a Grassroots Practice of Technology

Though in SMA's history as a movement (since 2011) modern technologies were always present in some capacity, according to my findings, newer ICTs got added to their sociotechnical system as the movement grew and more complex tasks emerged. In theory, these ICTs—Google products for document management, internal surveys, emails, photo storage, etc.; Facebook, Twitter, Instagram for social media outreach; Zoom for regular regional-scale meetings—were being appropriated successfully [94]. That is to say, when I asked members about the performance of these ICTs, they shared outcomes that matched with what these technologies promised to deliver. The everyday tasks they needed to accomplish via ICTs were not far removed from what these tools promised to afford in the first place. As I shared in the last chapter, the time when I joined the SMA, the common belief I gathered from the field was that these tools were a value-add to the movement, especially, for the movement's productivity. With the help of modern technology, SMA was able to produce collaborative documents faster, efficiently organize meetings, acquire donations and media attention—all of which count as invaluable capital for sustaining any organization let alone a volunteer-run movement led by and centered around people of color that is constantly having to resist systemic inequity to even exist. However, from the very beginning of my relationship with the SMA, several members of the leadership also expressed a fear that modern technology may be driving the movement away from their actual base: Black and Brown people in the rural South. For these people, modern technology only made the movement more

inaccessible.

Therefore, although the appropriation of ICTs as it happened in the SMA was successful in the technical sense, it came with a significant cost. For a movement whose sole purpose is to build up a sense of collectivity across the South—the gradual exclusion of the more marginalized members of the movement is not an acceptable consequence of ICT appropriation. It questioned the very identity of the movement.

Beyond gathering the wisdom of SMA leadership, as I became a member of the movement myself, I started noticing the same patterns of exclusions. Additionally, I also noticed that although SMA leadership understood ICTs as a core reason for these exclusions, they also could not avoid ICT dependencies in sustaining the movement even when they wanted to. For instance, in an internal meeting that took place in early 2018, one member of the leadership (§4.3.1) noted this to the communication group,

> There is no denying the fact that some of our technologies are complicated and not easy to reach. We know this. We suffer from this. We try to choose better too. The whole reason we invested in the Zoom plan is so that we accommodate our rural folks who want to join via cellphone. But there's also no denying the fact that we need the Internet to help us be who we are, and so many of our people lack that access.

This sentiment came back frequently in my conversations with the SMA, especially during moments of organizational breakdowns that baffled the leadership, such as, having alarmingly low registration count in SMA meetings from rural people who were meant to be at the center of the meeting. In mid-2018, SMA leadership made an official request to the communication team to look more into the problem—and not with a post-facto investigation of registration count or other similar outcomes, but through community-centered means of research that would also help prevent such exclusions in the future. For the time that followed, we worked together toward co-designing a technology practice rooted in grassroots values.

I share more of this process below, but to put in contrast with the earlier description of tech-

nology practice, by 2019, SMA was prepared to hold their meetings in rural towns with limited or no internet connectivity, in fact, they prioritized meeting in rural towns of the South. They also built long term partnerships with South-based Black-led radio stations and print media organizations as means toward decolonizing media in the movement. Examining the politics of technology became a part of SMA's culture. Through both informal and formal reflections/collective-evaluations we conducted with SMA members, especially with the rural members of SMA, this ongoing practice made them feel more connected in the movement. Moreover, they expressed that they felt more agency over the technologies of the movement.

This shift in relating to technology more critically —particularly with centering the experiences and agencies of members situated at the margins—was accomplished through incorporating an enacted lens of technology use [103]. An enacted lens reminds us that "investment in and deployment of technologies is not an indicator of organizational improvement or change. Such improvement or change depends not on technologies *per se*, but on whether, what, and how technologies-in-practice are enacted with them" [103]. It should be noted that this does not translate to technology scholars teaching communities of practice how to use modern technology in some "proper" way that preserves the true culture of said community. Such reductive interpretations, although perhaps completely justified given academia's history of establishing supremacy over users of technology [53], are far from the truth of our collaboration toward designing a grassroots practice and enactment of technology. Rather, I approached this as a task of co-organizing a movement within the movement—building on and being led by the rich cultural practices in place in the SMA, I uncovered the following with my findings: i) why ICTs were being enacted in the exclusionary way they were in the SMA ii) the meaning in artifacts (including technology artifacts) as constructed by the movement, and iii) how to use this analytical and ontological framing of technology-use to build up a relational infrastructure holding technologies-in-practice accountable for their consequences in the movement.

Table 5.2: Structure & Agenda of the First Movement Communication Workshop (MCW1)

| Time | Phase of the workshop |
|---|---|
| 12PM-1PM | Community lunch & cultural grounding |
| 1PM-2PM | Consciousness: perceptions of ICTs and broader understandings of technology in the movement |
| 2PM-3PM | Vision: envisioning an alternative future of technology practice |
| 3PM-4PM | Strategy: next steps and action items to the future vision of technology |

### 5.3.1 Understanding enactment of ICT structures

My relationship with the SMA from the very beginning led me to experience their technologies as my own. But to understand the structures within those technologies I needed to gather the experiences of members at different positions of power and privilege in the movement. I began by studying the experiences of the rural South—SMA already had meetings at rural towns of the South, I accompanied them, participated in their meetings, gradually opened up discussions around the collective experience of technology in the movement.

ICTs in the SMA gradually claimed a central position once it was brought into the fabric. As was shared in the last chapter but is nevertheless important to reiterate to ground the findings I share here, by the time I joined SMA—seven years into SMA's organizing history—ICTs were already established as a symbol of power, a status of modernity in the movement. A popular belief among the rural demography of the movement was that ICTs favored younger generations in the movement, often the ones who belonged to the urban, white, middle-class demography. In the workshops, the same pattern was revealed.

Take the example of the first movement communication workshop (MCW1) conducted in Sunflower County, Mississippi (agenda shared in Table 5.2). Sunflower County is historically significant in the civil rights movement of the United States. Activist, community organizer, and

notable civil rights leader Fannie Lou Hamer was born in the Mississippi Delta and organized in Sunflower County [164]. It is also known for having been home to the Choctaw Indians for hundreds of years before the arrival of white settlers [165]. As of 2019, its population[1] was 73.8% Black, 24.7% white, 1.3% indigenous or Latinx. SMA had multiple long-term members who belonged to this place—some of whom had even organized with Fannie Lou Hamer during Freedom Summer in 1964 [123]. In choosing to host a meeting at this particular place, SMA wanted to acknowledge the meaning this community has held in the history of racial struggles in the U.S. South in the past as well as in recent times.

This is to say, in my goal of understanding technology structures, I, too, needed to be intentional about choosing the place for these workshops. The history of a place in structural oppression and its subsequent role in the context of grassroots organizing played an important role in making this choice. MCW1 took place as a part of a three-day SMA meeting that drew people from all over the U.S. South. This included people who came from local towns in Sunflower Country and other parts of Mississippi, as well as people who traveled from other parts (for example, I was a part of a larger crew that traveled from Atlanta, Georgia) from the U.S. South to take part in this meeting. We began the workshop at one in the afternoon after lunch—this scheduling was to accommodate people who were coming from afar. In a room separate from the overall meeting venue, we set up a circle with chairs for participants to sit on. This remained a ritual for all of the workshops I conducted—in evaluating the workshop later in the day participants noted that the circular arrangement helped participants feel connected to one another. Another intentional choice, suggested by my co-facilitator (a long-term member of the SMA) in this workshop, was to keep the use of technologies in facilitating the meeting as minimal as possible. Only technologies in the room were physical—an easel, an easel pad, and some marker-pens to take notes with during facilitation. In the consciousness phase of the workshop (Table 5.1), upon answering what ICTs has meant in the community one is representing, a participant self-identified as a "youth organizer in Mississippi" shared:

[1] `https://www.census.gov/quickfacts/sunflowercountymississippi`

> I am a big believer in the power of social media, especially Instagram stories to get the messages across.

Not all participants shared this sentiment, in fact, most people present in this workshop had a different story to tell about their experience with social media.

> I feel as though our use of social media and website is dedicated more toward potential funding organizations to show that we are up-to-date with new technologies so we are worthy of their money and trust. Most of our elders do not get the messages we share on social media anyway, so it either creates extra work for some people to say the same message through different platforms for different people or more often what happens in a volunteer-run already over-burdened community organization such as ours is that we gradually forget about those to whom our messages do not reach.

The participant who shared this point of view said so with a feeling of, in her words, "both sadness and defeat," as an older person from a local town in Sunflower County contributed to this line of thought.

> Yes, we get excluded and feel obsolete in movement spaces, but more than anything else I feel ashamed of owning just a flip phone, of not understanding social media, of being afraid of the new wave of technologies entirely. I am not used to feeling that way in my community.

What this community elder, an indigenous person, referred to was then elaborated on by my co-facilitator from the SMA: she validated the experience of this village elder and further noted:

> Our communities are fundamentally rooted in the knowledges, experiences, and wisdom of our elders; to lose that would be a loss of an entire culture.

MCW1 was filled with more such stories of lived experiences. One thing we collectively noted about their ICT experiences was how these reflected their experiences with structures outside of

ICTs. Practice theory already explicitly mentions this possibility, "in their ongoing and situated action, actors draw on structures that have been enacted previously (both technologies in practice and other structures) and in such action reconstitute those structures" [59]. What I observed with my participation in the organization supported this theory: SMA's enactment of technology structures followed the same patterns of exclusions seen in broader social structures they operate in. Though they earnestly strive to resist these exclusions in the social sphere, when the same exclusions are mediated through ICTs, they are more likely to go unnoticed. Even when they are noticed, the cost of the examination is too high.

> I don't think we can establish strong credibility among the urban population without a steady presence on social media. And I mean both individuals and allies we need in the movement as well as organizations that more likely to support us financially, legally, and otherwise.

On the other hand, this begs for a more complex question asked by a participant at MCW1:

> It's just when we forget about the people who are not on these shiny new wave tech places aren't we also perpetuating racism of the last few centuries? And really what does it mean for movements like ours to look more like new wave technologies and less like, say, black radical traditions?

Throughout workshops and field visits I gathered a unifying theme in these individual experiences with ICT and the structures within them, as synthesized by participants at the end of MCW1,

> the historicity of racism and previous experiences with racist structures make it hard for us movement members, particularly people of color from the rural South] to trust them [new technologies].

Further, at this stage participants also began to note that the generational gap and the rural-urban gap the movement witnesses are related to questions about expertise, i.e. who are considered to be experts of new technologies, i.e. ICTs, in the SMA? We ended MCW1 with the promise

Table 5.3: Structure & Agenda of the Second Movement Communication Workshop (MCW2)

| Time | Phase of the workshop |
|---|---|
| 10AM-11PM | Community breakfast & cultural grounding |
| 11PM-12PM | Consciousness: i) reflecting on the experiences of managing ICTs of the SMA and overall notion of technical expertise (Google Draw activity shared with Fig. 5.1)ii) reflecting on personal journeys to ICTs |
| 1PM-2PM | Community lunch |
| 2PM-3PM | Vision: building on the visions of future of tech practice from MCW1, especially the role of "technology experts" in that future |
| 3PM-4PM | Strategy: next steps and action items to de-center ICT expertise and broadening understandings of both technology and expertise |

and plan for a future workshop toward identifying and unpacking the very notion of technical expertise in the movement.

Toward capturing the essence of how technology structures are enacted by the perceived experts in the community, I conducted another workshop primarily for the members of SMA's communication group. This second workshop of movement communication (MCW2) took place in Atlanta, Georgia (agenda shared in Table 5.3)—where most communications team members were located, including me. This workshop took place in an urban location, at an office building owned by one of the SMA organizations. This workshop had a different setup from MCW1. For instance, the overall setup of the room had the look and feel of a workplace. Unlike MCW1, MCW2 involved many technologies—both physical and digital. Almost all of the participants had personal computing devices (such as laptops or tablets) in front of them—in MCW2, I specifically wanted participants to reflect on the experience of maintaining several ICT artifacts of SMA. In fact, in the first phase of the workshop participants made a list of all the digital tools

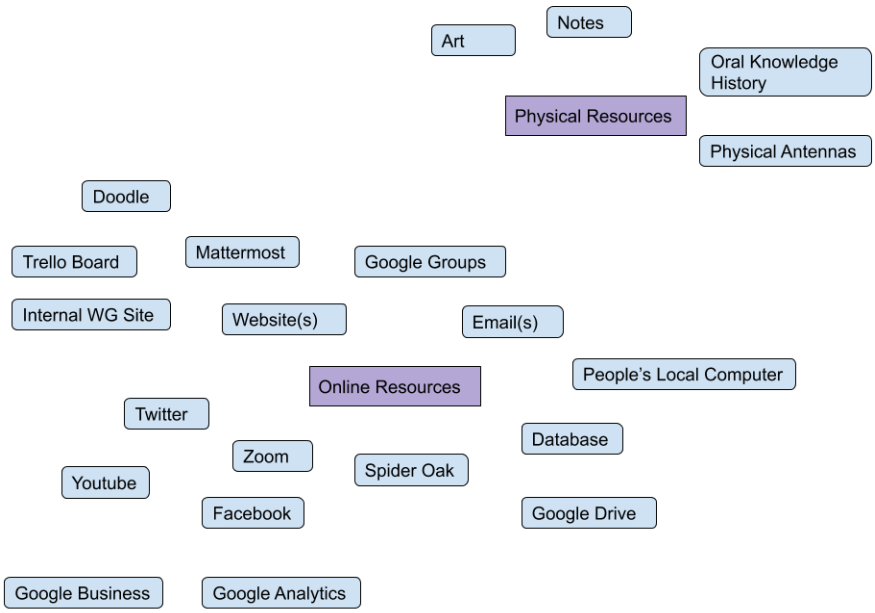



Figure 5.1: List of technology resources made by participants of the second movement communication workshop (MCW2) on Google Draw

and technologies of the SMA was using the Google Draw feature in our shared Google Drive feature. Fig. 5.1 was the outcome of that activity.

After this activity of mapping out technologies of the SMA, in the consciousness phase of the workshop, I guided participants toward sharing more on their personal journeys that led them to be maintainers of these tools—a role in the movement that gives them the status of "technology experts." As a member of the communication group, I shared my own journey too.

Grounding ourselves in the more personal journeys we have taken to get close to ICTs, we began investigating the notion of expertise. Particularly, we reflected on what technical expertise meant for the participants. For several members perceived expertise, in reality, meant more responsibility. It also meant a certain feeling of detachment from the political identity of the movement. As a young member of the group with several years of youth organizing experience said:

> I feel that being one of the few people who know how to manage Zoom has some-

> how made me less of a political person and more of a technical support person. It's as though I am at once the most essential person for a meeting to even take place but on the other hand my organizing skills or experience has nothing to do with my role.

It was not a rare occurrence for people with technical expertise and roles to suffer from this identity crisis within the movement. They gravitate to the movement because they believe in the politics and wants to be a part of it in practice, however, as soon as they become a member of the communication working group they are seen as "technology people"—who are important for their technical skills and problem-solving abilities but not belonging to the political crowd of the movement. Members shared that this disconnect often made them feel frustrated, as one member put it,

> If it's our expertise that is causing us to be seen as a technical support team then we have much deeper insecurities at play here.

In the vision phase of this workshop, we decided to host a third movement communication workshop as a part of a larger SMA meeting to discuss more on what it would mean for the rest of the movement to de-center the notion of technology expertise. Further, participants noted that one way of approaching this could be by collectively gathering more of the physical resource as noted with Fig. 5.1—what are the physical resources and artifacts being used by the different community organizations of the SMA, located all over the U.S. South?

### 5.3.2 Significance of (technology) artifact in the movement setting

The discomfort felt by the people in the margins of a structure reveals important truths about the structure itself. It urges us to identify and look more into the different actors and elements that make up the structure. For the SMA, creating, maintaining, and relating to their own artifacts have been an important part of the movement culture. Artifacts—such as, technology artifacts, financial artifacts, cultural artifacts—are considered as key resources that help uphold the movement's structure. To feel distant from and intimidated by one of the key artifacts (ICTs

in particular) was not only an odd occurrence it was also damaging the relationship between the perceived "experts" and the "non-experts" in the movement.

Toward co-designing a grassroots practice of ICTs we needed to explore the meaning of technology as an artifact as perceived by the SMA. Separating technology-as-artifact from technology-as-practice is an important step in the direction of establishing the practice lens of technology [103], which is also what I set out to do with the SMA. I observed and experienced a range of SMA artifacts in use: from flyers and handbooks to manifestos, from bandanas and t-shirts to funds, WiFi service, and cellphones to food. Their relationship to material artifacts that help support the movement carries a deep sense of care and respect. In that, there are spiritual and cultural grounding exercises in place naming the value of the resources, honoring them for the role they play in making any meeting happen. Technology artifacts, too, get included with the same intentions. However, technology also holds a complex meaning and history. Inspired by the SMA's grassroots tradition of analyzing social issues, in our workshops, we often looked beyond the current experiences of technology, and investigate the historical significance of these experiences. For this, we would listen to the elders as they shared how they have seen communication practices evolve through the civil rights era in their communities as well as what they learned from their ancestors about technology (beyond information technology) has meant to them. At MCW1 in rural Mississippi, one participant noted:

> It's hard to think about technology without thinking about slavery, about stolen inventions from our people about how technology has always meant power that we did not have. I trust that modern technology can help our causes of liberation but I guess I am too old and too poor and too Black to really be able to believe in that.

With the introduction of newer ICTs like the file management software Google Drive or social media platforms like Facebook, the meaning and definition of what counts as technology shifted, and this sense of detachment from newer technology artifacts got further stabilized. We discussed this again in the third movement communication workshop (MCW3) held in Mobile, Alabama (agenda shared in Table 5.4). MCW3 was similar to MCW1 in design—in that, both

Table 5.4: Structure & Agenda of the Third Movement Communication Workshop (MCW3)

| Time | Phase of the workshop |
|---|---|
| 9AM-10AM | Community breakfast & cultural grounding |
| 10AM-12PM | Consciousness: i) skill-sharing of movement communication tools & techniques including ICT-use ii) workbook activity to record digital and physical resources being used in different U.S. South communities iii) political analyses of ICT technologies used and connecting lived experiences/feelings expressed in the workbook with ICT values |
| 12PM-1:30PM | Community lunch |
| 1:30PM-2:30PM | Vision: building on the visions of future of tech practice from MCW1 & MCW2, especially developing a framing from that future synthesizing all findings |
| 2:30PM-5PM | Strategy: co-creating principles & agenda for the framing developed in the vision phase |

took place in the rural, historically significant town of U.S. South and both took place as a part of a larger SMA meeting. However, a distinctive quality of MCW3 was that it was also imagined as a skill-sharing session—when inviting participants to the workshops we explicitly said that there would discussions and training around both physical and digital communication artifacts. Participants were encouraged to participate if they were interested in sharing their experiences of movement communication in their own communities. This workshop had representation from local community organizations in Alabama, and further drew people from all over the U.S. South per the tradition of SMA meetings. This workshop made use of technology artifacts as needed—we had a projector set up for skill-sharing sessions; an easel, easel pad, and marker-pens for facilitation; we also had some personal computing devices open for people who wanted to discuss the website or social media management with a hands-on experience.

In the consciousness phase, everyone had a chance to share their skills associated with movement communication with the rest of the group. We specifically asked participants to think beyond ICTs when sharing these skills, as a result, we had skill-sharing of a range of topics like how to write the content of a flyer so that it reaches the intended audience. We also had ICT-related training sessions: participants particularly wanted to learn more about social media best practices, understanding analytics to control the reach of social media posts, and managing websites. In the consciousness phase, I further handed out a workbook to all participants so they could take notes of how they felt as they were being introduced to the new ideas and technologies, as well as what they found challenging about the ICTs being discussed from their own experiences in their own communities.

Nine out of twenty-one people who attended this workshop said that they have a hard time trusting social media or any new technology for that matter because their only experiences with technology have had "violent" implications for their community. A youth organizer from Georgia shared,

> I know we are supposed to hail social media for recording videos of police brutality and what not but I don't know what's out there after encountering the surveillance

> devices they have got in our public schools. Machines seem to not like my kind.

Followed by these disclosures, the group reflected on how their feelings toward new technologies are based on actual communal experiences of people of color in the United States and beyond. On this note, participants were urged to imagine who they thought most of these technologies (Google Drive, Social Media platforms like Twitter or Facebook, technologies that were discussed for their utility throughout the workshop) were made for as well as who were they made by.

> Well, this morning only in the town hall we talked about the digital divide, I personally don't feel like any of the Internet is made for me, for my skin color or my age.

The group further named the corporations behind these systems. Several people could not name companies that produce ICTs, many said they *"never thought of these new technologies that way."* The discussion of the workplace behind ICTs also made them curious about the conditions much of these technologies were made in:

> who designs? who builds? Who decides what designs are useful? Who is left out of this process entirely?

Led by this question at large, I also actively co-created an artifact with the SMA. The process of making a culturally significant artifact—the handbook of movement communication—in both physical and digital forms, was itself a process of uncovering the meaning of technology artifact in the SMA. Especially in May 2019, after MCW3, the community felt a need for deliberately making culturally meaningful artifacts that will mend the rocky relationship between "the new and the old wave of technologies." Since handbooks were already a part of SMA culture, we decided to make a movement communications handbook that hosts—in both digitally and physically accessible ways—my findings on what it means to create a grassroots technology practice.

In the months that followed, I had several conversations with the communication working group members on making this tool, while I signed up for most of the development work needed

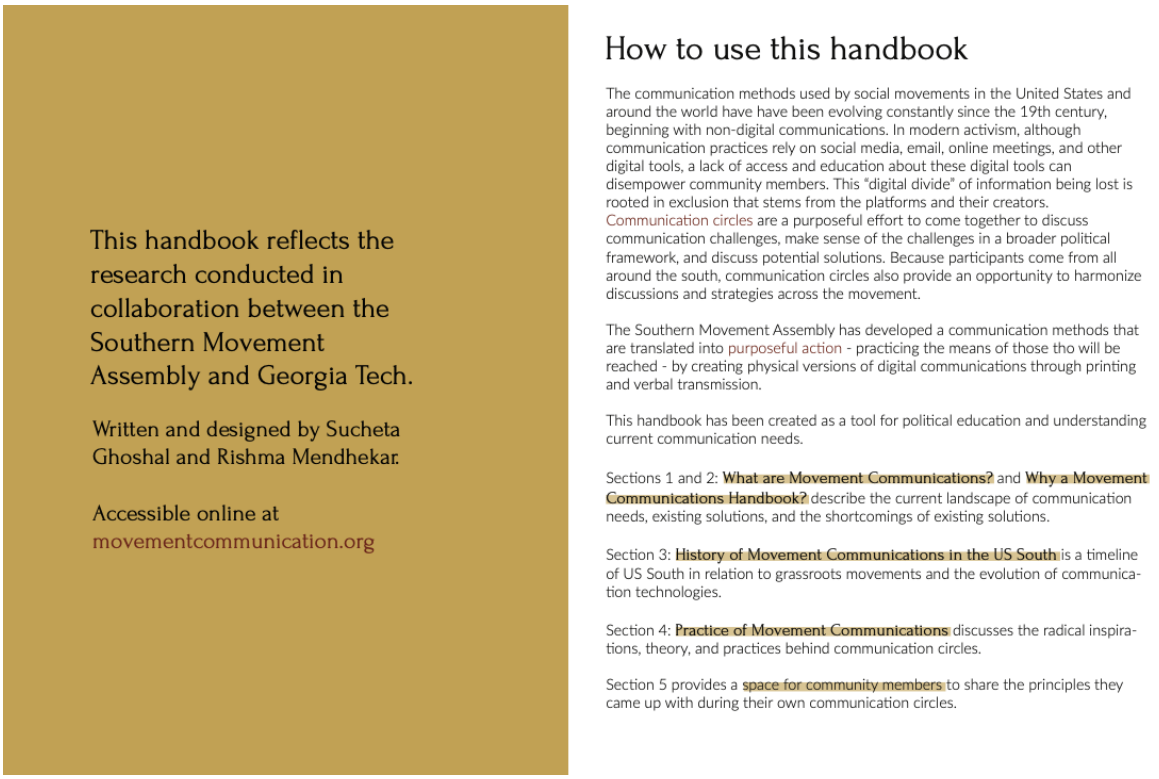



Figure 5.2: The first iteration of the print layout of the handbook of movement communication begins with an introduction to the idea of movement communications. This iteration was taken to the annual SMA meeting in November 2019 to gather community feedback on the artifact for its next iterations.

to bring this tool to life. The communications team also had meetings with members across the movement to gather feedback on different iterations of this process.

In these meetings, the handbook was imagined as an anchor for the technology structure SMA wished to enact, as opposed to the one that the organization ends up enacting due to the circumstances mentioned above. In our meetings with community elders and governance council members of the SMA, we went through several iterations of design—both in the content and the layout—that would support that desired enactment. In the final rounds of this iteration, we decided that a key element to support this would be to make it a combination of both a living document for reflection on communication practices and a comparatively steady artifact hosting the history of communication practices in movement organizing in the South through time. Specifically, it was discussed as,

> I think it would be really cool to see and remind ourselves that we existed and communicated and got things done before the Internet came into the picture. We are not running away from the Internet, but it's important to never forget that our histories, practices, and victories transcend the digital.

It was further established that the handbook needed to be as freely accessible as possible. One of the leaders of SMA mentioned in one of these informal discussions about the handbook,

> We were producing open-source documents and tools for organizing before it was called open source. We always believed in the dissemination of movement knowledge as freely as possible. Look at all the handbooks and tools we do have—you can! Because they are available. And not just on the Internet. We bring it to you, in print, free of cost.

This led to imagining the handbook of movement communication as a web platform as well as a physically printed version of the content of the web platform posed as the first step. Accordingly, the content of the handbook was in part determined by the motivation for it to exist as a standalone resource for anyone who wants to facilitate conversations about the politics of technologies used in their own communities.

As an artifact of grassroots enactment of technology practice, the handbook conveys to its readers/users the following: i) an understanding of the existing tools for movement communications, ii) the problems with those tools and how they create the need for communication circles, and iii) the history of movement communications in the US south, which provides context for the modern landscape of movement communications.

The handbook begins (as shown in Fig. 5.2) with introducing the grassroots culture of movement communication: specifically, there are three calls to action which provide introductory information about what movement communication is, why we have created a handbook about it, and how a "user"/reader can use the handbook to look at their own movement's communication methods and facilitate conversations about technologies being used in the community.

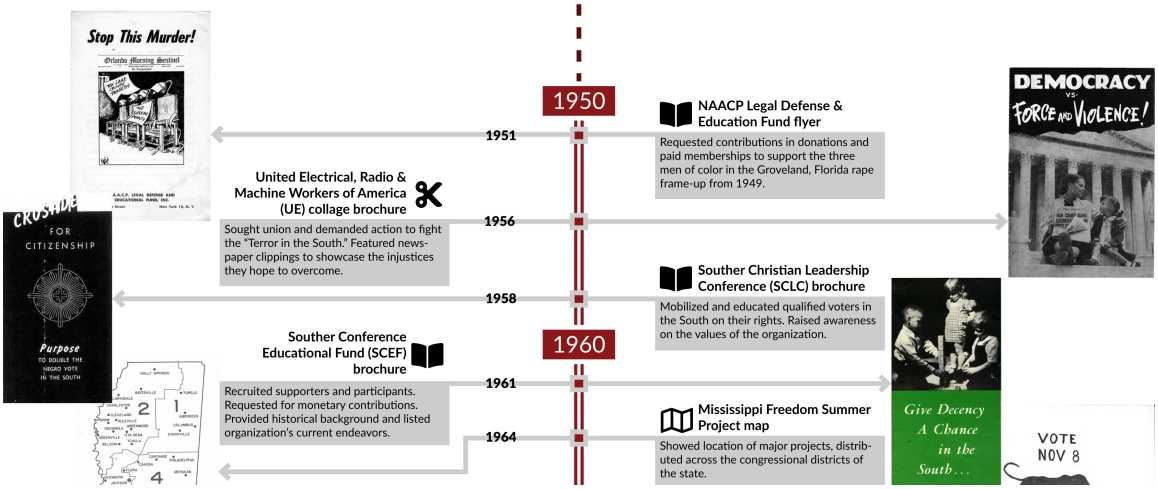



Figure 5.3: As a movement community with a rich history of grassroots organizing, SMA has always valued and grounded themselves in the rich history of the South. Our goal of establishing ICTs as political subjects in the movement, therefore, also called for a similar historical investigation.

Next, the handbook discusses the needs for such culture work in a movement—the existing landscape of movement communication methods, and specifically how the use of digital tools can leave out central members of the movement [5]. On a higher level, this section also provides context for why MCWs were organized and what specific gaps they fill in the existing landscape. It also includes guidance on how to host more such workshops in grassroots communities beyond scholarly interventions.

Finally, to situate the ICTs used in the movement in the overall history of tools in movement organizing in the U.S. South, the handbook contains a timeline of communication tools in use from the 1950s to the modern-day. I show a part of this timeline with Fig. 5.3. Each entry on the timeline describes the communication tool, its purpose, and the organization which implemented it. This format allows readers to understand how the techniques were used while acknowledging the Southern movement groups who paved the way for modern social justice work.

### 5.3.3 Relational infrastructure to resist technology structures

In our previous chapters, I shared in detail how relationships work as a building block for the movement structure. Toward the design of a grassroots practice of technology, I found that to be

particularly useful to ground my efforts with. Throughout our workshops I urged participants to share what they imagine an ideal technology practice to be like: what do they desire technology to become in their communities? At the end of the MCW3 hosted in Mobile, Alabama we had a list of collective visions:

- Decolonize technology use.
- Redefine and reclaim technology: our communities have been inventing technologies since forever. Technology is not just Google or Facebook; growing our own food, making food, feeding our people is a kind of technology. We need to take back the definition of technology.
- Support each other in learning new technologies.
- Follow the corporations and their practices.
- Make sure communities are educated about technologies before choosing to use them.
- Learn how to protect and defend our people in digital spaces.
- Expand our communication beyond social media.
- Take print outs of social media posts to church gatherings, be aware that not everyone *can* be online.
- Use local print media.
- Bring back the radio.
- Make our own technologies.
- Distribute our own technologies.

In these visions and otherwise, the call for stronger relational bonds persisted. The adoption of ICTs affected the relational dynamic among various entities of the organizational structure. The urban becoming distant from the rural, younger members starting to grow apart from

the elders in the community, grassroots organizing as a culture starting to prioritize social media over their own cultural artifacts, etc. represented the broader relationship breakdowns across the movement. Toward addressing this, we were intentional in how the communications team wanted to work on improving relationships not only between people and technology but also, and more importantly, between the SMA and other Black-led media/technology organizations.

This goal was particularly put to action in May 2019, when SMA began planning their annual meeting [2]. Their annual meeting, which typically hosts hundreds of people, is a significant political goal for the community every year. It is a way for them to sustain existing relationships and build new solidarities within the South. This gathering counts as a valuable ritual through which SMA physically manifests the sense of community that they strive to sustain all year long via digital networks. Often these meetings are organized with limited funding resources, yet, funding is allocated more toward getting people to attend these meetings free of cost. Additionally, they provide scholarship opportunities for people who may need travel or accommodation support in those days. This is to say, to SMA, these meetings are more than a physical gathering of people who care about their cause. It is about intentionally making space for people who are often forgotten from the decision-making process of traditional democracy.

Technology, especially modern technology and ICTs, plays a key role in making this happen in reality. However, ICTs also create new dependencies that then influence organizing decisions going into the meeting. Some of these decisions are less politically loaded than others, but, ICTs stay an integral component of this process as those are the mediums that facilitate the collaborative efforts from members all over the US South and at times even with members across the world. For example, even though SMA prioritizes the physical presence of members from all over the world in the meetings, in reality, it becomes difficult for both financial and logistical reasons to get everyone to travel to the event venue. Additionally, organizations associated with SMA try to raise funds throughout the year for this specific event, and they often need to prove their validity to funding organizations through Internet presence and activity. Needs such as these start

[2] I was specifically asked to help with communication and outreach decisions for organizing this meeting by co-leading the planning group along with other prominent members of the movement.

posing Internet connectivity as a primary need for the possible meeting venue.

In several of the planning meetings for this annual meeting, there were discussions about what this need meant for the community. There were engaged conversations that drew from findings from the workshops—members unanimously agreed that Internet connectivity dependency contributes to the already existing practices of exclusion that rural areas often already face. The communication working group met weekly for the next several weeks and came up with a communication strategy that still allowed SMA to host a meeting in rural Mississippi, in a venue that had limited connectivity both in terms of the Internet and also in terms of being geographically remote. In developing this strategy, the communication group often went back to the principles developed in the third workshop shared above. Translating those principles, the communication team came up with a four-fold approach of communication that involved: i) community radio, ii) local print media in Mississippi, iii) physical technologies (e.g. walkie-talkies) for internal coordination at the venue, iv) social media. This consideration posed social media as a small part of the entire communication strategy—a measure that meant to address the concerns previously raised by community members of overvaluing social media and undervaluing culturally meaningful communication venues. This strategy also ended up facilitating new connections to the movement with local print media and radio stations—both kinds of connection have deep meaning for the community and were built with long term goals in mind.

In November of 2019, the new communication strategy was put to test during the actual physical meeting in Mississippi. After reaching the venue on the day before the meeting started, communication working group members worked closely together to set up cellular repeaters to boost Internet signals from some mobile connections, set up walkie-talkies to enable in-ground communication among organizers, a group text messaging medium adding all phone numbers of people who were attending the meeting. Additionally, they ran a meeting among the leads across the four components of the communication plan: a member from Black Radio Project in charge of recording interviews of elders attending the movement shared in this meeting that, *"this right here feels like 'project: decolonize media'—I am so glad I am here with all of you feeling all the hope*

*for our technologies that we harnessed for centuries."*

## 5.4 A Critical Practice of Technology: Insights from Designing with the SMA

In her book "Race After Technology: Abolitionist Tools for the New Jim Code" sociologist Ruha Benjamin puts forth a powerful call to reimagine technology [23]. She notes that to "appropriate and reimagine science and technology for liberatory ends" are to reimagine "the default settings–codes and environments—that we have inherited from prior regimes of racial control" [23]. Throughout my findings, I see both the appeal and the trap of the default settings of technology. The appeal of corporate technologies like Google, Facebook, Twitter is not lost among the grassroots movement communities like the SMA, in fact, it is the opposite. They have to constantly grapple with two contrasting realities: i.e the utility, scale, and stability that these technologies provide the systemic boundaries of access and ability these ICTs set up. These volunteer-run community organizations often lack the privilege to refuse mainstream technologies [89], and as I noted with the findings this is due to a range of reasons: from losing credibility among funders and urban population to losing touch with communities overseas. When the fabric of technology at large perpetuates and upholds patterns of racial and class segregation [57, 166, 23], challenging such structures in practice become extremely difficult even for communities that are most equipped to question systemic exclusions. For SMA, there were two important structures at odds with each other: the systemically unequal and segregated social structure of the U.S. and the Global South and the technical structure of mainstream ICTs that play a role in upholding systemic inequity.

I argue that it is this position that SMA and many other regional grassroots movement organizations hold in their use of ICTs, that make them uniquely qualified to lead us toward a future where the practice of technology can be held accountable for the inequities they cause and perpetuate. I call this future of technology: *a critical technology practice*. The idea of a critical practice of technology is not new. It has been articulated as an agenda for technology workers in the past by notable HCI scholar Phil Agre. Though technology practice in our field as well as

the global market of technology has changed since 1997—when Agre suggested that we should ground technology practice in the reflexive work of critique—his vision still holds [167]. He notes that a critical practice of technology will:

> at least for the foreseeable future, require a split identity – one foot planted in the craftwork of design and the other foot planted in the reflexive work of critique. Successfully spanning these borderlands, bridging the disparate sites of practice that computer work brings uncomfortably together, will require a historical understanding of the institutions and methods of the field, and it will draw on this understanding as a resource in choosing problems, evaluating solutions, diagnosing difficulties, and motivating alternative proposals. More concretely, it will require a praxis of daily work: forms of language, career strategies, and social networks that support the exploration of alternative work practices that will inevitably seem strange to insiders and outsiders alike. This strangeness will not always be comfortable, but it will be productive nonetheless, both in the esoteric terms of the technical field itself and in the exoteric terms by which we ultimately evaluate a technical field's contribution to society. [167]

Agre's vision has been further echoed by CSCW and HCI researchers and scholars through various research endeavors (such as in a workshop organized by Dourish et al. that took place in a SIGCHI conference in 2004 [168]). In imagining a future of critical technology practice, I follow Agre and others' footsteps, and further draw insights from my work of building a similarly grounded technology practice with the SMA. I argue that while the value in creating and maintaining new technologies of liberation is undeniable, a critical technology practice will go beyond the creation of new and improved technology artifacts. Incorporating the view of *technology and/as practice* (as described in Section 2.3.2), it will pay attention to the power relationships between people and technology—especially when working with communities that have been systemically harmed via technologies of oppression. As noted with findings, I was able to make use of the framing of technology *as* practice particularly in my work with uncovering the relationship

between rural organizing and technology. It offered us opportunities for inquiring into people's relationships with past and present structures to see how that shapes their enactment of technologies of the present. Without the work of understanding and acknowledging the complex relationships that exist between communities harmed and technologies of harm, we cannot begin to imagine sociotechnical solutions that will truly challenge "the default settings" of technology as Benjamin calls it [23]. A critical technology practice has to ground itself and grow from critiques of technology culture at large, and while much of it remains to be explored with future HCI research, in this chapter, I offer thoughts on what it means to practice a foundational part of critique: *accountability*.

Accountability has found many meanings in sociology, anthropology, and even fields of technology. In my imagination of critical technology practice, I build on the notion of *community accountability*. Community accountability is a framework that comes from radical intersectional feminist philosophies of grassroots organizing [169, 127, 170, 171]—in this way, community accountability is already deeply practice-oriented. Accountability, as realized in grassroots communities, already exercises a sharp focus on structures—both embodied in and enacted by institutions of power. In my work with the SMA, I facilitated conversations to ensure that technology, too, is seen through the lens of structures. This helped us in shifting the view of technology from artifacts that are intimidating and inaccessible to an extension of broader structures that SMA was already equipped to question and hold accountable.

Communities of practice, especially the ones marginalized by ICTs, hold a role beyond the binary of users/non-users—their experiences with technology reflect broader systemic patterns in the culture of technology [101]. A critical practice of technology, I argue, will *center community accountability toward ICTs*. One of the local organizations of SMA (based in Durham, North Carolina) focuses primarily on the practice of community accountability in the movement. In my work of facilitating a critical technology practice with the SMA, we frequently went back to the practices and framings provided by this organization. They define community accountability as:

> "the ability and desire of communities of the oppressed to adopt a "harm-free" way of thinking and to construct processes and mechanisms that broadly address harm" [172].

In what follows, in an attempt to provide some suggestions toward designing critical technology practices, I will discuss i) my work with the SMA as an enactment of mainstream technologies not only circumventing their embodied structures but also holding them accountable for the structures they embody, and, ii) the role of designers and scholars of technology in facilitating such infrastructures of accountability toward the culture of "big tech[3]."

### 5.4.1 Enacting Accountability, Enacting ICTs

Grassroots movement organizing is as much about dismantling oppressive social structures as it is about envisioning and designing a new world free of oppression. However, as community elders in the SMA told us time and again "we never, for once, believed that freedom is possible without mutual accountability." Oppressive forces of racism, classism, sexism, ableism, etc. have reigned in our local and regional realities for long enough that actual counter-practices and infrastructures become essential to resist the enactment of these dominant structures in our own communities. Grassroots movement organizations are radically aware of this truth and are continuously working to establish such counter-practices with tools and technologies like democratic decision making, cultural grounding, community farming.

Big tech—or as is popularly referred to in SMA's narrative as "new technologies"—often can be seen as excused from that scrutiny because of how pervasive they have become in the activist spheres as well. Beyond activism, social media and ICTs, in general, have definitely been subverted for cultural expressions of blackness [98], queerness [173], etc. While subversion happens, these subversive practices of ICTs do not negate the fact that these technologies are more likely to support structures of inequity in society [23]. As Cathy O'Neil put it these technologies "codify the past. They do not invent the future" [174]. Although in recent times these inequities are being

[3] `https://en.wikipedia.org/wiki/Big_Tech`

brought more to the surface with recent protests led by tech workers[4], Benjamin notes "efforts to combat coded inequity cannot be limited to industry, nonprofit, and government actors, but must include community-based organizations that offer a vital set of counter-narratives about the social and political dimensions of the New Jim Code[5]" [23].

I argue that behaviors of accountability grounded in community-powered counter-narratives are not only possible, they *already exist*. The feelings toward big tech that rural SMA members shared with me are indicative of this culture of accountability being already in place. Their refusal to succumb to the culture of ICTs is a choice driven by prior experiences of surveillance via the same technologies. This is not to say that desires toward the status of owning ICTs and having Internet connectivity do not exist among the movement members, but because of their deep-rooted lived experiences with the social and political dimensions of technology, they are also quick to identify this desire as largely manufactured as is the "sense of defeat" that participants felt when having to use social media to stay relevant to funders.

Like any community of a regional scale, these experiences and narratives are not homogeneous. Since movement organizations also reflect the geography of a place, it was clear from my experiences that people with the privilege of tech-expertise in the movement did not feel the same apprehension toward technology. In fact, they often perceived the rural people to have "hostile" feelings toward technology. While a part of my work with the SMA has been facilitating open conversations about technology across positions of power and privilege, it has also been about validating the individual and communal feelings SMA felt toward technology. Often technology stays limited in the artifact status—an apolitical entity symbolizing progress in the community—which in itself is a direct enactment of the "master narrative" of technology Benjamin talks about. SMA too has been responsible for internalizing, then enacting, such master narratives. My work with the SMA has been to facilitate the movement against such narratives—with tools and stories [138] that were within the SMA all along but because of the blind spots in ICTs, they became

[4] `https://techworkerscoalition.org`

[5] A concept Ruha Benjamin coins to describe a range of discriminatory designs that encode inequity in her book "Race After Technology: Abolitionist Tools for the New Jim Code" [23]

harder to notice at times.

My visioning of community-powered accountability toward ICTs is very much in line with how communities have already held technology systems of oppression accountable for centuries [169, 127, 170, 175]—technologies like policing [166], redlining [176], eugenics [177], etc. Once ICTs are brought under the lens through which these communities have had to inspect other technologies all along, and practices of these ICTs are examined and reflected upon for the structures they are promoting, communities can begin to resist the structures within everyday ICTs more systematically.

My work with the SMA followed this path. Our solution was not to create more complex technologies (or even when we turned to complex artifacts they did not work well beyond the center of the movement) or to stop using the mainstream ICTs altogether, instead, we honed in on the long term relationships and partnerships with Black-led technologies. We did it not as a token act of solidarity, but with the knowledge that community radio stations hold political significance in the South, the power, wisdom, and strength they represent will be invaluable in redefining the meaning of technology in the SMA. The infrastructure of accountability has not posed a solution to tech monopolies, in fact, so far as our scope of infrastructuring went, we saw the ICT structures as a *conceptual problematic*. Conceptual problematics "can only possibly be resolved—rather than solved—because cultural materials (e.g. "information") are not causal" [98]. For example, in this view racism is seen as a conceptual problematic, rather than a "problem" to be "solved" [98]. Accountability infrastructures such as the one in SMA are therefore long-term projects that will continue to question and resolve any and every conflict that arises from technology use toward a just distribution of power and privilege in the community.

### 5.4.2 Role of Designers in Infrastructures of Accountability

In many ways, my role in the SMA was a constant exploration of where and how designers or scholars of technology can help, if at all. Such existential inquiry is not uncommon for community-centered research, as Irani and Silberman ask in the context of their role in the activist technology

Turkopticon, "what if the problem is not how we design in a highly unequal world, but the very fact that we are read as designers at all" [178]? The issues of power and privilege that I point out with SMA's technology-use led me to uncover the contentions surrounding the idea of technical expertise. In reality, the designer part of my identity alone was often given the same pedestal of expertise and therefore inaccessible much like the technologies themselves. I was politically valued as a representative of activist circles from the Global South but my credentials as a technology scholar were seen as separate from my politics.

Designers will always be in a contrasting power position as long as we venture into communities with our own tools, techniques, methods with limited efforts in contextualizing it. The first-ever workshop we conducted with the SMA was designed in collaboration with a long-term organizer of the community, specifically to ensure that talking about technology would not end up looking any different than talking about housing in the community. I stayed away from the usual participatory design (PD) techniques and brought in insights from PD and other academy-approved design techniques only when they seemed fitting with the culture of the SMA. I did so because as Irani and Silberman further note "designers and HCI practitioners have a privileged place as a research community that self-consciously attempts to generate both the futures of pervasive technologies and methods for generating those futures" [178]. I wanted to stay conscious of the ways in which the power and privilege within our design methods shape the story of SMA's technology use.

On the other hand, it is uniquely our place as designers and HCI practitioners to get involved in infrastructures of accountability toward the culture of ICTs—not just ICTs we create and/or maintain but also ICTs that dominate and shape the culture of technology that in turn shapes our professional roles as technology scholars. This is not a call to do more user-centered design of new technology artifacts with community-based organizations, while such actions and collaborations are crucial toward pushing science and technology to liberatory ends, we still need to reconcile with the fact that many of these community-based organizations will have to depend on big tech for the near future. Designers and technology scholars with more exposure to pow-

erful technology corporations can help mediate, integrate, and dismantle such dependencies in community organizations. Not only can this be a way to hold corporate cultures of technology accountable, but it can also keep us accountable to the communities we touch, and finally hold the broader culture of expertise (that we massively benefit from as designers) accountable for the harm it creates in an already unequal world.

## 5.5 Conclusion

I do not think that a long-term, fundamental change in marginalized experiences of technology can happen without a substantial change in the social, political, and economic conditions of a society that make phenomena like Big Tech possible. But I also see the value in pragmatic workarounds for the meantime—ones that contribute to the broader agenda of dismantling systemic exclusion via technology while simultaneously trying to minimize ongoing harm among communities that are already having to overcome centuries of technologically-mediated erasure. In this chapter, I offered the framing of a critical technology practice—grounded in community accountability and other values of liberation practiced by a Southern movement—toward such radical enactments of technology, while we collectively build a future where such measures of circumventing oppressive designs are no longer necessary.

# CHAPTER 6

# CONCLUSION: VISIONS FOR A GRASSROOTS PRAXIS OF TECHNOLOGY

My work with the grassroots social movements of the U.S. South to the extent I have reported in this thesis is by no means a conclusive work on the broader agenda that I set out in the introduction. This is to say, the agenda to construct and practice resistance and accountability against hegemonic technology cultures of the world has always been and is going to be, a long term project beyond the scope of a dissertation. Perhaps, beyond the scope of the academy altogether—who are we to set the rules for how the culture we bet our livelihoods on gets dismantled? But at the same time, a liberatory future of technology should not be the burden of over-burdened community organizations alone. My work of helping build a local movement and helping sustain a regional one has been an exploration in finding the balance with which I can use both parts of identity—a technology scholar in Western academia and a community organizer from the Global South—to actively help build that future.

Specifically, in this dissertation, I have shared how I established meaningful research partnerships with two grassroots social movement organizations—the local organization of Science for the People, Atlanta (SftP-Atlanta), and the regional movement of Southern Movement Assembly (SMA)—both based in U.S. South. Although my work with these two organizations produced academic outcomes—both conceptual and material—my relationship with these communities has been rooted in my volunteer commitments of social movement work I did with them. Participatory action research, the primary method of inquiry that I employed for this work, gave me a unique opportunity to conduct community-centered research rooted in transnational solidarity over the cultural connection of the South.

In this chapter, in what follows, I conclude my dissertation by first sharing the key contributions and broader impact of my work as I see it. Next, continuing to reflect on my dissertation I share some of my personal takeaways from this work. I hope to channel these takeaways into my

future work.

## 6.1 Summary & Contributions

I see the scholarly outcomes of this dissertation to be contributing to the field of Computer-Supported Cooperative Work (CSCW) and broader Human-Computer Interaction (HCI). CSCW research has long established the importance of understanding situated uses of information communication technologies (ICTs). To understand technology, we need to understand the dynamics of both its production and use. Understanding ICTs in use can certainly uncover the needs, purposes, and motivations of users—as have been studied extensively with CSCW research on appropriation [58]. That said, my focus in this dissertation has been to posit *technology-use as a way of understanding the cultures of technology production*.

This particular way of looking is not new to CSCW. For research within this discipline that particularly engages with modern critical theories [50] this has been a long-standing project: what does it mean to rethink the technological object, to move away from "the myth of the lone creator of new technology on the one hand, and the passive recipients of new technology on the other" [160]? In her foundational piece "Located Accountabilities in Technology Production," Lucy Suchman suggests that for "for technology designers and developers, the basic change implied by rethinking the technological object is from a view of design as the creation of discrete devices, or even networks of devices, to a view of system development as entry into the networks of working relations – including both contests and alliances – that make technical systems possible" [160]. Reconstructing technology relations, as Suchman puts it in that article, was a call to action.

With my work and this dissertation, I see myself primarily as responding to this call. In many ways, my finding of the fact that modern ICTs create a division within communities of practice is something that we already knew. My findings confirmed this truth. We further knew that users have been working around these gaps—by training themselves to gain more expertise, to catch up to digitization of work and workplaces [63]. We knew that designers and developers of modern technologies have been trying to be more aware of these gaps and further mitigate them with

more user-centered, participatory approaches to design [48]. Makers and marketers of corporate technologies, too, have extended their efforts to bridge the digital divide (for example, with their distribution of devices among the disadvantaged people, or, building better internet access in rural areas). This dissertation does not negate the validity of these efforts in any way, but it does urge us to *rethink the fundamentals* of what we have come to know as ICT-mediated digital gaps in communities.

The work of reconstructing technology relations, as I established through this dissertation, goes beyond providing token access to technology devices and the ability to appropriate or even create custom technology artifacts for organizational goals. I argue that it also urges designers, developers, practitioners, and users to examine technology-mediated exclusions as extensions of structural harm. In this way, I see this dissertation to be broadly contributing to ways in which CSCW designers and researchers can approach fraught technology relations in communities of practice that are also victims of structural oppression.

To do so, I took on a method that allowed me, as a researcher, to be aware of the ways in which power and privilege are intertwined with the position of a technology scholar. Participatory action research (PAR), as a method, allowed me to switch roles—between a researcher and an activist. It also offered me space to reflect on my own experiences with both technology and structural harm. I see this dissertation to be a contribution toward our methodological choices for *how* to reconstruct technology relations in communities. While PAR may not be the only way to conduct such research, the tools and practices that I mention throughout the dissertation can be incorporated in broader ethnography-based research in CSCW.

I further note that the work of reconstructing technology relations needs us to be first aware of the consequences of a fraught technology relation. With my first study with SftP-Atlanta, I contributed an understanding of exactly what is meant when we speak of modern ICTs being misaligned with liberatory goals. In that, I identified three core values—inclusivity, privacy/security, and social translucence—to be missing from the popular ICTs used by grassroots social movements.

With my second study with the regional movement of the Southern Movement Assembly (SMA), I contributed an additional layer to this understanding of the consequences of conflicted technology relations. I noted that with BIPOC communities organizing against structural oppression, and especially communities of the South, this conflict is often cultural. The framing of the culture, as this dissertation argues, is a particularly useful lens to look at technology-mediated structural exclusion. This study ultimately leads me to generate a theory for why using ICTs lead to exclusionary consequences even for communities that actively question structural exclusion. The theory suggests that these communities are often at an awkward intersection of technoculture of exclusion and technoculture of inclusivity. That is to say, while they need to rely on the ICTs and the culture of systemic exclusion they are often produced from, their adoption of ICTs also makes them inherit the cultural traits of ICT production. ICTs, much like other structural phenomena, reproduce their values in sites of their use. A key contribution of this study was the systematic analysis of structurally conflicted technology relations—particularly, in a regional community in the U.S. South.

Toward constructing a grassroots praxis of technology, that would address structural gaps perpetuated by technology, I further took a sociomaterial approach. That is to say, methodologically, I used a combination of material and discursive exploration of ICTs in the movement. Specifically, I organized three *participatory workshops*, collaboratively *designed a handbook of movement communication*, and contributed toward *building a relational infrastructure for resisting ICT structures* of a regional movement. A key contribution from this final part of my dissertation was the translation of a theory into practice—specifically, I worked on translating the theory of reproduction of ICT values I generated with my earlier study. I found the combined and iterative use of theory and practice to particularly be useful in surfacing the lived realities of ICTs. For instance, the theory I generated with the interview study only suggested that ICTs can reproduce their values onto the fabric of a community leading to complex implications for its culture. But it is only with the application of material and discursive practices of workshops and design that I could surface *why* such reproduction happens even in communities that actively

stand against it. I posit that this is not only caused by values currently embodied by ICTs but also their enactment of ICTs is related to how the harm caused to them by technology systems and structures of the past. While this theory and the particular lived realities that the theory is grounded on can be seen as contributions on their own, I also present the overall sociomaterial approach as a useful technique for studying technology-use as a way to elicit hegemonic cultures of technology production.

Finally, I see my dissertation as an attempt in community-centered, praxis-oriented research. In this dissertation, I am particularly committed to grassroots praxis, but beyond that, I see many opportunities for following a similar approach in community-centered research in CSCW with a commitment to a different base of theory and practice. In what follows, I share some of my personal takeaways from this dissertation and grassroots praxis in general.

## 6.2 Reflections & Visions for the Future

As a CSCW researcher and an individual committed to the cause of public accountability toward the hegemonic culture of technology, the most important thing I have gathered along the way is hope for a liberatory future of technology and society, for resistance to a hegemonic culture of technology is not only possible *it is already happening*. There is massive inequality on the side of resistance, we are outnumbered and over-exhausted, but we are here. The Southern Movement Assembly (SMA) frequently uses a slogan that goes "the seas are rising and so are we"—I have always taken several quiet moments to fully grasp the power in that slogan—all the countless times I have heard it. It speaks to the impossible challenge many communities—mostly indigenous, poor people of color living in coastal areas of the South—face against the rising temperature of the earth, the sea levels, and the climate capitalism driving it all. The slogan, "so are we" carries a stubborn faith in the power of the people, in their collective anger, because they are not only rising in number they are rising in their consciousness, visions, and strategies too. The consequences of climate change are more immediate and more fatal than the consequences of Big Tech in these communities, but if I had to take away a pearl of singular wisdom from the epistemologies of the

South, it would be to never lose focus on the intersecting ways capitalism operates. Technologies of oppression are connected and mobilized, we who refuse to let them win have to be too. The slogan is also a reminder of the fact that no matter how big and overwhelming systems of oppression and erasure look like, the resistance can be just as loud and overpowering.

In my vision, a *grassroots praxis of technology*–one that I studied, designed, and theorized throughout this dissertation—will facilitate a carefully nuanced analysis of technology structures in the future. This future calls for a synergistic effort from both theory and practice—a phenomenon theorized in Chapter 2 of this thesis in the name of *praxis*. Portuguese economist Boaventura de Sousa Santos whose book "Epistemologies of the South: Justice Against Epistemicide" has substantively influenced my writing in this thesis, notes an ever-growing distance between theory and practice in the political Left. He describes in great detail how this distance has been well warranted, especially since "Eurocentric critical theory (and the political Left it founded) has not acknowledged: women, indigenous peoples, peasants, Afro-descendants, piqueteros, the unemployed, gays and lesbians, and the Occupy movement"—movements and social groups that—"dwell not in industrial urban centers but rather in remote sites, whether in the forests and river basins in India or up in the Andes and in the larger plains of Amazonia" [7]. With this, Santos paints an important but frequently overlooked picture of the Global South and its deeply diverse epistemologies. While he sees the value in Eurocentric critical theory, he poses that it has perpetuated a deep discrepancy between what is stated in theory and what is happening in the field of liberation around the world—a discrepancy deeply rooted in the fact that these theories ignored the political existence of these global struggles. However, the disconnect between theory and practice has come with significant consequences for the political Left. For example, it has been largely failing at identifying what it is up against: is it aiming at replacing capitalism with a post-capitalist future, or is it attempting to replace neoliberalism with a type of capitalism with a more human face? I posit that the same can be argued for how we understand technology at the moment—our theories about technology getting detached from our understandings of contemporary technology practices carry the risk of this ambiguity too. Do we want

to build technologies toward that post-capitalist future? Or do we want to replace one capitalist technoculture with another? As a well-documented example for the latter, we can take the trend of replacing the technoculture of product design with the technoculture of "design thinking" led by Silicon Valley [85]. A grassroots praxis of technology—grounded in epistemologies of the Global South including the U.S. South—will urge designers, researchers, practitioners to take the former stance.

What does it mean to take this stance—practically and intellectually? In Chapter 3, I reflected on what grassroots culture means for the regional movement of the SMA. Their commitment to grassroots praxis can be seen in the way they designed their movement structure, their mode of participatory decision-making, and perhaps most importantly how they stay ideologically open to form global solidarities. In my experience of the movement, they refuse to compromise on this commitment to grassroots culture for the sake of efficacy or political coherence. While the hegemonic culture of technology drove the movement to choose technical efficiency over inclusivity at times—the movement was fundamentally open to its growth beyond that pattern. A grassroots praxis of technology will similarly stay vigilant of the way the hegemonic technology culture may interfere with its commitment.

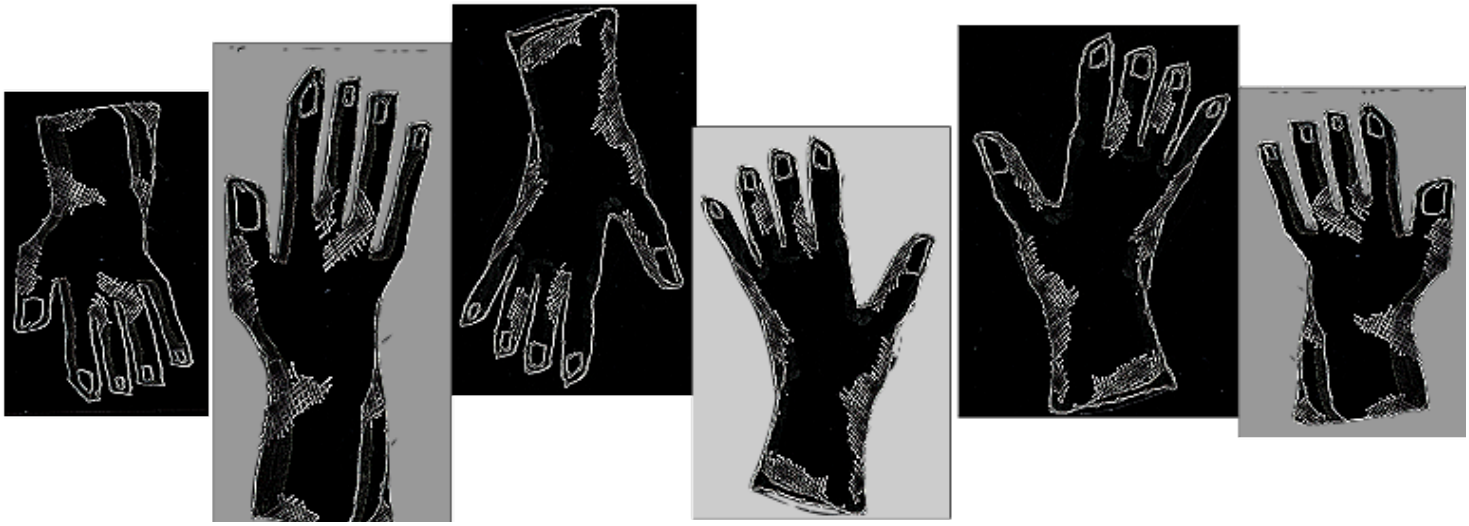
For this, we will need to sustain a culture of technology that prioritizes its own accountability, especially prioritizes to be held accountable by the people and communities hegemonic cultures have excluded for so long. A grassroots praxis of technology will be centered on community accountability. Accountability in this sense is not just an evaluation of how smoothly our tools function in communities, it is also an evaluation of whether our tools (and our designer selves) are needed in the community at all. As discussed in Chapter 4, my work with the SMA was a constant exploration in finding what works for the community—this required me to reject the belief often perpetuated in institutions of technology i.e. as technology scholars our only way to help communities is with new sociotechnical solutions involving novel artifacts. A preoccupation with novelty in technical artifice is both misguided and narrow-sighted. I was working with a community that carried wisdom predating industrial visions of the modern world—wisdom

that was rooted in their survival against forced labor, migration, dehumanization of their core identities. Learning from how they relate to modern technology as well as what their technological imaginaries are proved to be more important and necessary than creating a novel technical "solution" in the name of grassroots design. Toward prioritizing community accountability, a grassroots praxis of technology will similarly prioritize marginalized cultures and their radical imaginaries over Eurocentric measures of technical efficacy and advancement.

# Appendices

# APPENDIX A

# HANDBOOK OF MOVEMENT COMMUNICATION



# Handbook of Movement Communications

We aim to develop a culture of movement communication that is rooted in the acknowledgement that our tools and technologies are political objects.

This handbook reflects the views of the Southern Movement Assembly.

Accessible online at
movementcommunication.org

# How to use this handbook

The communication methods used by social movements in the United States and around the world have have been evolving constantly since the 19th century, beginning with non-digital communications. In modern activism, although communication practices rely on social media, email, online meetings, and other digital tools, a lack of access and ability around these digital tools can disempower community members. This "digital divide" of information being lost is rooted in exclusion that stems from the platforms and their values.

The Southern Movement Assembly calls for accountibility towards these platforms. We ask you to organize communication circles---a purposeful effort to come together to discuss communication challenges, make sense of the challenges in a broader political framework, and discuss potential solutions.

## Our ultimate goal is to create a culture of movement communications that resists exclusion via digital technologies.

We offer this handbook as a tool for political education and understanding current communication needs. This is our first step towards building that future of technology in our movements.

Sections 1 and 2: **What are Movement Communications?** and **Why a Movement Communications Handbook?** describe the current landscape of communication needs, existing solutions, and the shortcomings of existing solutions.

Section 3: **History of Movement Communications in the US South** is a timeline of US South in relation to grassroots movements and the evolution of communication technologies.

Section 4: **Practice of Movement Communications** discusses the radical inspirations, theory, and practices behind communication circles.

Section 5 provides a space for community members to share the principles they came up with during their own communication circles.

# What are movement communications?

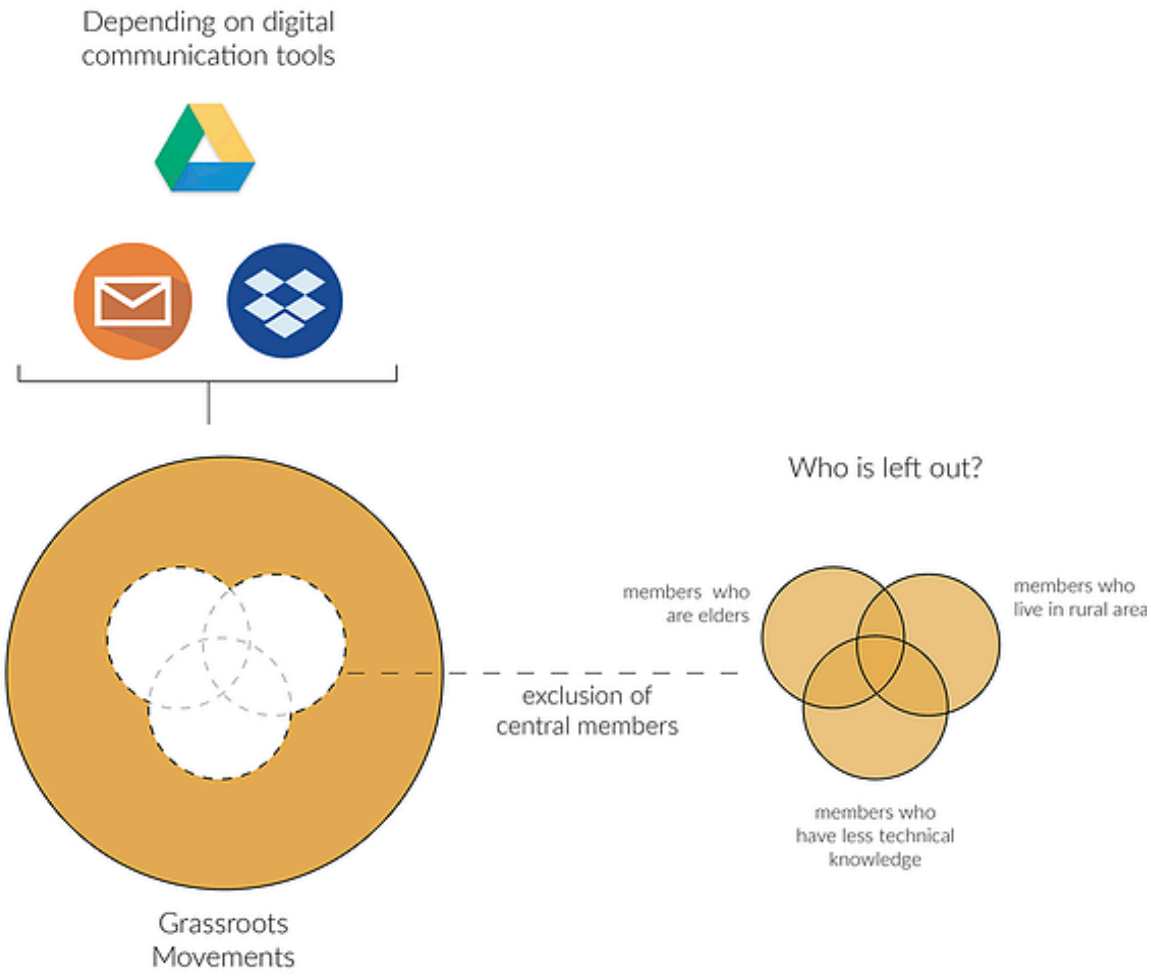
Throughout history, our people have used many tools and techniques of communicating the word of the movement, e.g. flyers, brochures, maps. Most recently these tools have taken a shift to digital technologies such as social media platforms  (Facebook, Twitter, etc.), collaboration platforms (Google Drive), and more. We may not agree with these digital monopolies, but we have to rely on them.

With a culture of movement communication, we mean to develop a cohesive practice of communication that is rooted in the acknowledgement that our tools and technologies are not mere instruments,

# Why a handbook of movement communications?

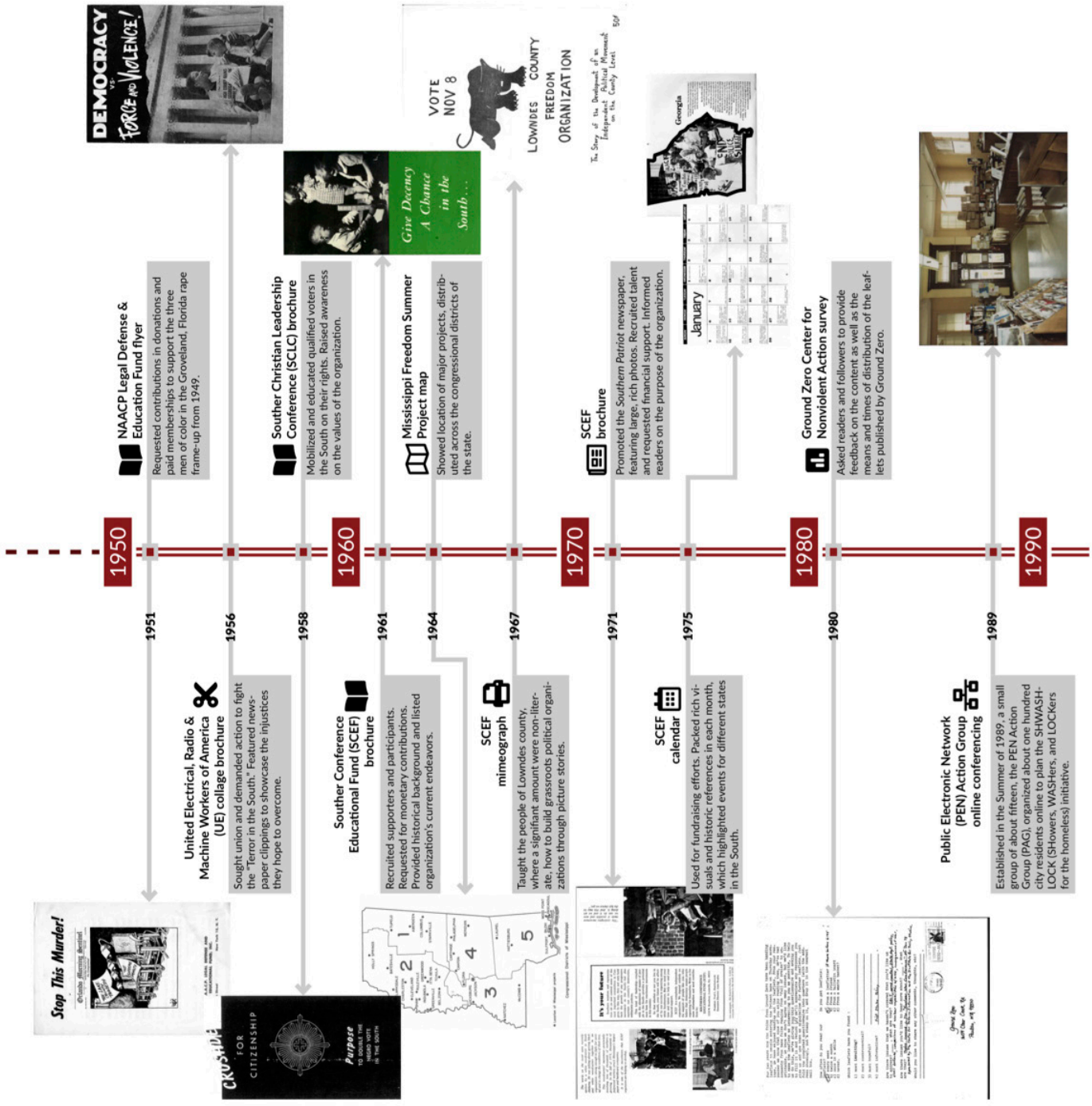
Popular digital platforms of today are built upon capitalistic values of efficiency and productivity, which are often associated with whiteness, masculinity, young age, and class status. Adopting these tools has the risk of perpetuating similar beliefs within our movements. This translates to technological power and knowledge being held by just a few members whose identities are associated with the values of technological efficiency. The choice to use digital communication tools also isolates members living in areas with unreliable internet connection.  These are only a few of the many consequences we are seeing in our communities.

We acknowledge that our choice of going digital can often directly conflict with the cultures of Black, Indigenous, and People of Color in the South. This handbook is a first step towards starting a broader conversation about modern technology and exclusion in our communities.



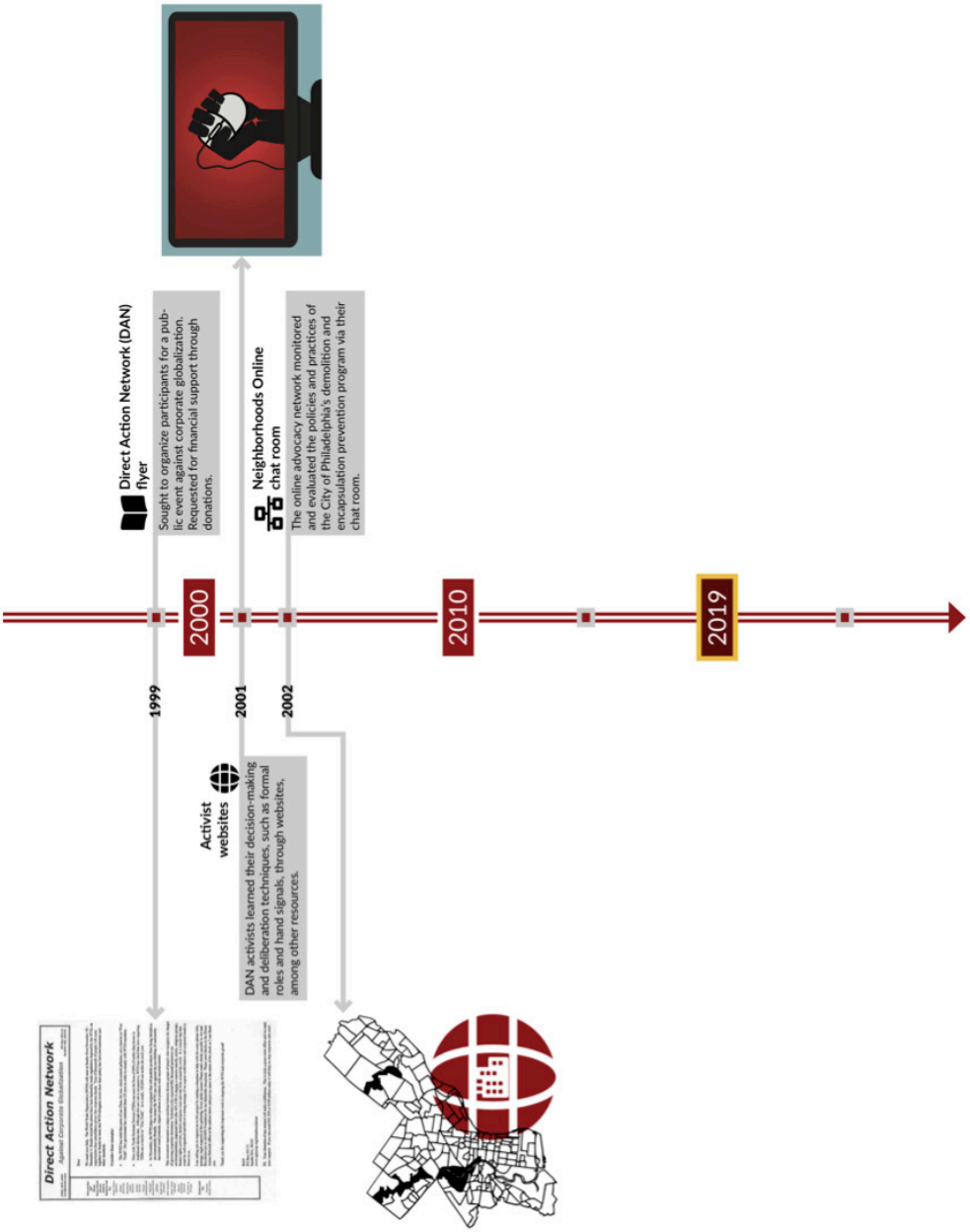
# History of Movement Communication Tools in the US South

Our cultures of communication transcend the use of digital tools. This timeline displays a glimpse of the rich history of movement communication tools and techniques used for the purpose of Southern movement organizing from flyers to online chat rooms. We want to be mindful of this history, and accept digital tools as a part of our overall journey of communication.



# History of Movement Communication Tools in the US South

We want to be mindful of this history, and accept digital tools as a part of our overall journey of communication. We communicated before digital tools were ever invented. We will continue to come together regardless.



# Practice of Communication Circles

What does it mean to imagine a communications infrastructure for our collective liberation, our dear movement? Organize a workshop, a meeting, a gathering of your people to discuss what you collectively want from your technologies. Who controls your technologies? Who is feeling left out in the movement because of your technologies?

We ask you to reflect on your technologies like you reflect on your community principles, make this collective reflection a ritual in your community.

Need examples? We organized several workshops in rural towns of the South that looked like the following.

Typically, we start by forming a circle. We were intentional about bringing all who represent us---our elders, our youth, our disabled folks, rural folks--all who make our community what it is. Make sure you are in a place that welcomes all too. We typically go through the following four rounds. The questions we list are some examples, you know your community best, you know what questions are most important for your folks to discuss.

**Where are you from?** This is when you check in with folks around you. Share where you are from. What are you living for? Who are your people? Who are you going to call during an emergency in your community? This is your space to ground yourself in whatever ways that suit your community.

**Consciousness.** Name the technologies you are using in the movement. What are the corporations and instituitions that made them? Who were they made for? Who were they made by? What values do they support? Who gets excluded by your choice of using them?

**Vision.** What are the technologies you want to keep using going forward? How do you pla n on reaching out to the folks who are less comfortable with modern technologies? Can you imagine a future where your technologies no longer divide you, but bring you closer?

**Strategy.** How would you imagine a future of communications where you prioritize hearing the systemically unheard? What technologies do that future entail?

What are some principles you came up with in your communication circle?

## REFERENCES


[1] A. Lorde and A. Rich, "An Interview with Audre Lorde," *Signs*, vol. 6, no. 4, pp. 713–736, 1981, Publisher: University of Chicago Press.

[2] F. Polletta and J. M. Jasper, "Collective Identity and Social Movements," *Annual Review of Sociology*, vol. 27, no. 1, pp. 283–305, Aug. 2001.

[3] S. Ghoshal, A. Parker, C. A. Le Dantec, C. Disalvo, L. Irani, and A. Bruckman, "Design and the Politics of Collaboration: A Grassroots Perspective," in *Companion of the 2019 ACM Conference on Computer Supported Cooperative Work and Social Computing - CSCW '17 Companion*, Forthcoming, Austin, Texas, USA: ACM Press, 2019, ISBN: 978-1-4503-6692-2.

[4] S. Ghoshal and A. Bruckman, "The Role of Social Computing Technologies in Grassroots Movement Building," *ACM Transactions on Computer-Human Interaction*, vol. 26, no. 3, pp. 1–36, Jun. 2019.

[5] S. Ghoshal, R. Mendhekar, and A. Bruckman, "Toward a Grassroots Culture of Technology Practice," *Proceedings of the ACM on Human-Computer Interaction*, vol. 4, no. CSCW1, pp. 1–28, May 2020.

[6] A. G. Mahler, *From the Tricontinental to the global South: race, radicalism, and transnational solidarity*. Durham: Duke University Press, 2018, ISBN: 978-0-8223-7114-4 978-0-8223-7125-0.

[7] B. d. S. Santos, *Epistemologies of the South: justice against epistemicide*. London New York: Routledge, 2016, OCLC: 957260929, ISBN: 978-1-61205-545-9 978-1-61205-544-2.

[8] A. Gramsci, *The Southern question*. West Lafayette, IN: Bordighera, 1995, OCLC: 34279206, ISBN: 978-1-884419-04-1.

[9] C. J. Robinson, *Black marxism: the making of the Black radical tradition*. Chapel Hill, N.C: University of North Carolina Press, 2000, ISBN: 978-0-8078-4829-6.

[10] E. Glissant, *Poetics of Relation*, trans. by B. Wing. Ann Arbor, MI: University of Michigan Press, 1997, ISBN: 978-0-472-09629-9.

[11] W. E. B. Du Bois, *Black reconstruction in America: 1860 - 1880*, 1. ed. New York, NY: The Free Press, 1998, OCLC: 249096527, ISBN: 978-0-684-85657-5.

[12] C. L. R. James, *The black Jacobins: Toussaint l'Ouverture and the San Domingo revolution*, Second edition, revised. New York: Vintage Books, a Division of Random House, Inc, 1989, ISBN: 978-0-679-72467-4.

[13] V. Harding, *There is a river: the black struggle for freedom in America*, 1. Harvest ed, ser. A Harvest book. San Diego, Calif.: Harcourt Brace, 1992, OCLC: 832765891, ISBN: 978-0-15-689089-2.

[14] J. C. Scott, *The art of not being governed: an anarchist history of upland Southeast Asia*, ser. Yale agrarian studies series. New Haven London: Yale University Press, 2009, OCLC: 301948134, ISBN: 978-0-300-16917-1 978-0-300-15228-9.

[15] V. Prashad, *The darker nations: a people's history of the Third World*, Paperback edition, ser. A New Press people's history. New York: New Press, 2008, OCLC: 836925945, ISBN: 978-1-59558-342-0.

[16] ——, *The poorer nations: a possible history of the Global South*. London ; New York: Verso, 2014, ISBN: 978-1-78168-158-9.

[17] J. Smith, S. Byrd, E. Reese, and E. Smythe, Eds., *Handbook on World Social Forum Activism*, 1st ed. Routledge, Nov. 2015, ISBN: 978-1-315-63419-7.

[18] R. M. Brewer, *The United States Social Forum: Perspectives of a Movement*, R. M. Brewer, M. Karides, W. Katz-Fishman, J. Scott, and A. Lovelace, Eds. ChangeMaker Publications, 2010.

[19] K. Visweswaran, *Un/common cultures: racism and the rearticulation of cultural difference*. Durham, NC: Duke University Press, 2010, ISBN: 978-0-8223-4621-0 978-0-8223-4635-7.

[20] F. Fanon, *Black skin, white masks*, 1st ed., new ed. New York : [Berkeley, Calif.]: Grove Press ; Distributed by Publishers Group West, 2008, OCLC: ocm71286732, ISBN: 978-0-8021-4300-6.

[21] A. Césaire and R. D. G. Kelley, *Discourse on colonialism*. New York: Monthly Review Press, 2000, ISBN: 978-1-58367-024-8 978-1-58367-025-5.

[22] V. Eubanks, *Automating inequality: how high-tech tools profile, police, and punish the poor*, First Edition. New York, NY: St. Martin's Press, 2017, ISBN: 978-1-250-07431-7.

[23] R. Benjamin, *Race after technology: abolitionist tools for the new Jim code*. Medford, MA: Polity, 2019, ISBN: 978-1-5095-2639-0 978-1-5095-2640-6.

[24] Z. Tufekci, *Twitter and tear gas: the power and fragility of networked protest*. New Haven ; London: Yale University Press, 2017, OCLC: ocn961312425, ISBN: 978-0-300-21512-0.

[25] A. Walton, "Technology versus African-Americans.," *Atlantic Monthly*, vol. 283, no. 1, pp. 14–17, 1999.

[26] B. Mabie, E. Gray, and A. Haider, Eds., *Black radical tradition: a reader*. London: Verso, 2018, OCLC: 1056206990, ISBN: 978-1-78478-618-2.

[27] B. Cailler, "Edouard Glissant: A Creative Critic," *World Literature Today*, vol. 63, no. 4, p. 589, 1989.

[28] B BlackPast, "(1963) Malcolm X, "Message to the Grassroots"," Aug. 2010.

[29] G. Deleuze and F. Guattari, *A thousand plateaus: capitalism and schizophrenia*. Minneapolis: University of Minnesota Press, 1987, ISBN: 978-0-8166-1401-1 978-0-8166-1402-8.

[30] J. Lofland, *Social movement organizations: guide to research on insurgent realities*, ser. Social problems and social issues. New York: Aldine de Gruyter, 1996, ISBN: 978-0-202-30552-3 978-0-202-30553-0.

[31] L. Staples, *Roots to power: a manual for grassroots organizing*, 2nd ed. Westport, Conn: Praeger, 2004, ISBN: 978-0-275-96997-4 978-0-275-96998-1.

[32] S. G. Tarrow, *Power in movement: social movements and contentious politics*, Rev. & updated 3rd ed, ser. Cambridge studies in comparative politics. Cambridge ; New York: Cambridge University Press, 2011, ISBN: 978-0-521-19890-5 978-0-521-15572-4.

[33] P. Freire, *Cultural action for freedom*, 2000 ed, ser. Harvard educational review no. 1. Cambridge, MA: Harvard Educational Review, 2000, ISBN: 978-0-916690-37-3.

[34] E. Ostrom, *Governing the commons: the evolution of institutions for collective action*, ser. The Political economy of institutions and decisions. Cambridge ; New York: Cambridge University Press, 1990, ISBN: 978-0-521-37101-8 978-0-521-40599-7.

[35] F. Polletta, *Freedom is an endless meeting democracy in American social movements*. Chicago: University of Chicago Press, 2002, ISBN: 978-0-226-92428-1 978-1-299-10467-9.

[36] R. Khera, Ed., *Dissent on Aadhaar: big data meets big brother*. Hyderabad, Telangana: Orient BlackSwan, 2019, ISBN: 978-93-5287-542-9.

[37] J. Drèze, *Sense and solidarity: jholawala economics for everyone*. Ranikhet: Permanent Black, 2017, OCLC: on1005614970, ISBN: 978-81-7824-521-8.

[38] V. Koshy, *Action research for improving educational practice: a step-by-step guide*, 2nd ed. London: SAGE, 2010, ISBN: 978-1-84860-159-8 978-1-84860-160-4.

[39] L. Dickens and K. Watkins, "Action Research: Rethinking Lewin," *Management Learning*, vol. 30, no. 2, pp. 127–140, Jun. 1999.

[40] K. Lewin and K. Lewin, *Resolving social conflicts: &, Field theory in social science*. Washington, DC: American Psychological Association, 1997, ISBN: 978-1-55798-415-9.

[41] C. Adelman, "Kurt Lewin and the Origins of Action Research," *Educational Action Research*, vol. 1, no. 1, pp. 7–24, Jan. 1993.

[42] N. Wallerstein and B. Duran, "Community-Based Participatory Research Contributions to Intervention Research: The Intersection of Science and Practice to Improve Health Equity," *American Journal of Public Health*, vol. 100, no. S1, S40–S46, Apr. 2010.

[43] J. P. Dimond, "Feminist HCI for Real: Designing Technology in Support of a Social Movement," no. December, pp. 153–153, 2012.

[44] J. P. Dimond, M. Dye, D. Larose, and A. S. Bruckman, "Hollaback!: The role of storytelling online in a social movement organization," in *Proceedings of the 2013 conference on Computer supported cooperative work - CSCW '13*, San Antonio, Texas, USA: ACM Press, 2013, p. 477, ISBN: 978-1-4503-1331-5.

[45] G. R. Hayes, "The relationship of action research to human-computer interaction," *ACM Transactions on Computer-Human Interaction*, vol. 18, no. 3, pp. 1–20, Jul. 2011.

[46] M. Q. Patton and T. A. Schwandt, *Qualitative research & evaluation methods: integrating theory and practice*. 2015, OCLC: 898167542, ISBN: 978-1-5063-0319-2.

[47] P. Dourish, "Reading and Interpreting Ethnography," in *Ways of Knowing in HCI*, J. S. Olson and W. A. Kellogg, Eds., New York, NY: Springer New York, 2014, pp. 1–23, ISBN: 978-1-4939-0377-1 978-1-4939-0378-8.

[48] C. DiSalvo, "Design and the Construction of Publics," *Design Issues*, vol. 25, no. 1, pp. 48–63, Jan. 2009.

[49] J. F. Freeman, "The Tyranny of Structurelessness," *WSQ: Women's Studies Quarterly*, vol. 41, pp. 231 –246, 2013.

[50] D. Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminist Studies*, vol. 14, no. 3, p. 575, 1988.

[51] C. R. Hayward, *De-facing power*, ser. Contemporary political theory. Cambridge: Cambridge Univ. Press, 2000, OCLC: 231861603, ISBN: 978-0-521-78564-8 978-0-521-78079-7.

[52] S. V. Scott and W. J. Orlikowski, "Entanglements in Practice: Performing Anonymity Through Social Media," *MIS Quarterly*, vol. 38, no. 3, pp. 873–894, 2014.

[53] L. T. Smith, *Decolonizing methodologies: research and indigenous peoples*, Second edition. London: Zed Books, 2012, ISBN: 978-1-84813-950-3 978-1-84813-951-0.

[54] P. Freire, *Pedagogy of the oppressed*, 30th anniversary ed. New York: Continuum, 2000, ISBN: 978-0-8264-1276-8.

[55] J. Servaes, "Participatory communication (research) from a Freirian perspective," *Africa Media Review*, vol. 10, pp. 73–91, 1996.

[56] D. A. Snow and S. A. Soule, *A primer on social movements*, ser. Contemporary societies. New York, NY: W. W. Norton, 2010, ISBN: 978-0-393-97845-2.

[57] W. H. K. Chun, "Introduction: Race and/as Technology; or, How to Do Things to Race," *Camera Obscura: Feminism, Culture, and Media Studies*, vol. 24, no. 1, pp. 7–35, 2009.

[58] P. Dourish, "The Appropriation of Interactive Technologies: Some Lessons from Placeless Documents," *Computer Supported Cooperative Work (CSCW)*, vol. 12, no. 4, pp. 465–490, Dec. 2003.

[59] M. S. Feldman and W. J. Orlikowski, "Theorizing Practice and Practicing Theory," *Organization Science*, vol. 22, no. 5, pp. 1240–1253, Oct. 2011.

[60] L. Mumford, *Technics and civilization*. Chicago ; London: The University of Chicago Press, 2010, ISBN: 978-0-226-55027-5.

[61] M. S. Ackerman, "The Intellectual Challenge of CSCW: The Gap Between Social Requirements and Technical Feasibility," *Human–Computer Interaction*, vol. 15, no. 2-3, pp. 179–203, Sep. 2000.

[62] F. Kensing and J. Greenbaum, "Heritage: Having a say," in *The International Handbook of Participatory Design*. Routledge, 2013, pp. 21–36.

[63] J. Grudin, "Why CSCW applications fail: Problems in the design and evaluationof organizational interfaces," in *Proceedings of the 1988 ACM conference on Computer-supported cooperative work - CSCW '88*, Portland, Oregon, United States: ACM Press, 1988, pp. 85–93, ISBN: 978-0-89791-282-2.

[64] A. Pacey, *Meaning in technology*. Cambridge, Mass: MIT Press, 1999, ISBN: 978-0-262-16182-4.

[65] S. Turkle, *Alone together: why we expect more from technology and less from each other*, Paperback first published. New York, NY: Basic Books, 2011, OCLC: 935281206, ISBN: 978-0-465-03146-7 978-0-465-02234-2.

[66] ——, *The second self: computers and the human spirit*, 20th anniversary ed., 1st MIT Press ed. Cambridge, Mass: MIT Press, 2005, ISBN: 978-0-262-70111-2.

[67] E. Gilbert and K. Karahalios, "Predicting tie strength with social media," in *Proceedings of the 27th international conference on Human factors in computing systems - CHI 09*, Boston, MA, USA: ACM Press, 2009, ISBN: 978-1-60558-246-7.

[68] J. S. Donath, "Identity and deception in the virtual community," in *Communities in cyberspace*, Routledge, 2002, pp. 37–68.

[69] B. Hogan, "The Presentation of Self in the Age of Social Media: Distinguishing Performances and Exhibitions Online," *Bulletin of Science, Technology & Society*, vol. 30, no. 6, pp. 377–386, Dec. 2010.

[70] A. Acquisti, L. Brandimarte, and G. Loewenstein, "Privacy and human behavior in the age of information," *Science*, vol. 347, no. 6221, pp. 509–514, Jan. 2015.

[71] A. Acquisti and R. Gross, "Imagined Communities: Awareness, Information Sharing, and Privacy on the Facebook," in *Privacy Enhancing Technologies*, D. Hutchison, T. Kanade, J. Kittler, J. M. Kleinberg, F. Mattern, J. C. Mitchell, M. Naor, O. Nierstrasz, C. Pandu Rangan, B. Steffen, M. Sudan, D. Terzopoulos, D. Tygar, M. Y. Vardi, G. Weikum, G. Danezis, and P. Golle, Eds., vol. 4258, Berlin, Heidelberg: Springer Berlin Heidelberg, 2006, pp. 36–58, ISBN: 978-3-540-68790-0 978-3-540-68793-1.

[72] R. Kling, "What Is Social Informatics and Why Does It Matter?" *The Information Society*, vol. 23, no. 4, pp. 205–220, Jun. 2007.

[73] B. Friedman, P. Kahn, and A. Borning, "Value sensitive design: Theory and methods," *University of Washington technical report*, no. 02–12, 2002.

[74] A. Feenberg, *Questioning technology*. London ; New York: Routledge, 1999, ISBN: 978-0-415-19754-0 978-0-415-19755-7.

[75] W. E. Bijker, *Of bicycles, bakelites, and bulbs: toward a theory of sociotechnical change*, ser. Inside technology. Cambridge: MIT Pr, 1999, ISBN: 978-0-262-52227-4 978-0-262-02376-4.

[76] L. Irani, J. Vertesi, P. Dourish, K. Philip, and R. E. Grinter, "Postcolonial Computing: A Lens on Design and Development," in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, ser. CHI '10, event-place: Atlanta, Georgia, USA, New York, NY, USA: ACM, 2010, pp. 1311–1320, ISBN: 978-1-60558-929-9.

[77] S. Bardzell, "Feminist HCI: Taking Stock and Outlining an Agenda for Design," in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, ser. CHI

'10, event-place: Atlanta, Georgia, USA, New York, NY, USA: ACM, 2010, pp. 1301–1310, ISBN: 978-1-60558-929-9.

[78] L. Dombrowski, E. Harmon, and S. Fox, "Social Justice-Oriented Interaction Design," *Proceedings of the 2016 ACM Conference on Designing Interactive Systems - DIS '16*, pp. 656–671, 2016.

[79] B. Friedman, "Value-sensitive design," *Interactions*, vol. 3, no. 6, pp. 16–23, 1996.

[80] B. Friedman and D. Hendry, *Value sensitive design: shaping technology with moral imagination*. Cambridge, Massachusetts: The MIT Press, 2019, ISBN: 978-0-262-03953-6.

[81] J. Davis and L. P. Nathan, "Value Sensitive Design: Applications, Adaptations, and Critiques," in *Handbook of Ethics, Values, and Technological Design: Sources, Theory, Values and Application Domains*, J. van den Hoven, P. E. Vermaas, and I. van de Poel, Eds., Dordrecht: Springer Netherlands, 2015, pp. 11–40, ISBN: 978-94-007-6970-0.

[82] B. Friedman and D. Hendry, "The Envisioning Cards: A Toolkit for Catalyzing Humanistic and Technical Imaginations," in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, ser. CHI '12, event-place: Austin, Texas, USA, New York, NY, USA: ACM, 2012, pp. 1145–1148, ISBN: 978-1-4503-1015-4.

[83] J. P. Barlow, *A Declaration of the Independence of Cyberspace*, Feb. 1996.

[84] M. Warschauer, *Technology and social inclusion: rethinking the digital divide*. Cambridge, Mass: MIT Press, 2003, ISBN: 978-0-262-23224-1.

[85] L. Irani, ""Design Thinking": Defending Silicon Valley at the Apex of Global Labor Hierarchies," *Catalyst: Feminism, Theory, Technoscience*, vol. 4, no. 1, pp. 1–19, May 2018.

[86] A. Brock, "Critical technocultural discourse analysis," *New Media & Society*, vol. 20, no. 3, pp. 1012–1030, Mar. 2018.

[87] S. Erete, A. Israni, and T. Dillahunt, "An intersectional approach to designing in the margins," *Interactions*, vol. 25, no. 3, pp. 66–69, Apr. 2018.

[88] A. Schlesinger, K. P. O'Hara, and A. S. Taylor, "Let's Talk About Race: Identity, Chatbots, and AI," in *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems - CHI '18*, Montreal QC, Canada: ACM Press, 2018, pp. 1–14, ISBN: 978-1-4503-5620-6.

[89] A. Voida, E. Harmon, and B. Al-Ani, "Homebrew databases: Complexities of everyday information management in nonprofit organizations," in *Proceedings of the 2011 annual conference on Human factors in computing systems - CHI '11*, Vancouver, BC, Canada: ACM Press, 2011, p. 915, ISBN: 978-1-4503-0228-9.

[90] J. Goecks, A. Voida, S. Voida, and E. D. Mynatt, "Charitable technologies: Opportunities for collaborative computing in nonprofit fundraising," in *Proceedings of the ACM 2008 conference on Computer supported cooperative work - CSCW '08*, San Diego, CA, USA: ACM Press, 2008, p. 689, ISBN: 978-1-60558-007-4.

[91] S. Prost, C. Crivellaro, A. Haddon, and R. Comber, "Food Democracy in the Making: Designing with Local Food Networks," in *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems - CHI '18*, Montreal QC, Canada: ACM Press, 2018, pp. 1–14, ISBN: 978-1-4503-5620-6.

[92] M. Flanagan, D. C. Howe, and H. Nissenbaum, "Embodying values in technology: Theory and practice," *Information technology and moral philosophy*, vol. 322, 2008.

[93] G. DeSanctis and M. S. Poole, "Capturing the Complexity in Advanced Technology Use: Adaptive Structuration Theory," *Organization Science*, vol. 5, no. 2, pp. 121–147, May 1994.

[94] G. Stevens, V. Pipek, and V. Wulf, "Appropriation Infrastructure: Mediating Appropriation and Production Work," *Journal of Organizational and End User Computing*, vol. 22, no. 2, pp. 58–81, Apr. 2010.

[95] C. G. Christians, "Cultural Continuity as an Ethical Imperative," *Qualitative Inquiry*, vol. 13, no. 3, pp. 437–444, Apr. 2007.

[96] M. E. Sweeney and A. Brock, "Critical informatics: New methods and practices: Critical informatics: New methods and practices," *Proceedings of the American Society for Information Science and Technology*, vol. 51, no. 1, pp. 1–8, 2014.

[97] A. Gupta and J. Ferguson, "Beyond "Culture": Space, Identity, and the Politics of Difference," *Cultural Anthropology*, vol. 7, no. 1, pp. 6–23, Feb. 1992.

[98] A. L. Brock, *Distributed blackness: African American cybercultures*, ser. Critical cultural communication. New York: New York University Press, 2019, ISBN: 978-1-4798-2037-5 978-1-4798-2996-5.

[99] H. Rheingold, *Smart mobs: the next social revolution*. Cambridge, MA: Basic Books, 2003, ISBN: 978-0-7382-0861-9.

[100] J. Lanier, *You are not a gadget: a manifesto*, 1st Vintage Books ed. New York: Vintage Books, 2011, ISBN: 978-0-307-38997-8.

[101] A. Pacey, *The Culture of Technology*. The MIT Press, 1983, ISBN: 0-262-16093-5.

[102] L. Suchman, "Practice and its overflows: Reflections on order and mess," *TECNOSCIENZA: Italian Journal of Science & Technology Studies*, vol. 2, no. 1, pp. 21–30, 2011.

[103] W. J. Orlikowski, "Technologies-in-Practice: An Enacted Lens for Studying Technology in Organizations," *Sloan School of Management, Massachusetts Institute of Technology*, 1999.

[104] L. Winner, *Autonomous technology: technics-out-of-control as a theme in political thought*, 9. printing. Cambridge, Mass.: MIT Pr, 2001, OCLC: 249274093, ISBN: 978-0-262-73049-5 978-0-262-23078-0.

[105] L. Althusser, *On the reproduction of capitalism: ideology and ideological state apparatuses*. London ; New York: Verso, 2014, ISBN: 978-1-78168-165-7 978-1-78168-164-0.

[106] S. Stokes, "Atlanta's First Food Forest Aims To Increase Access To Fresh Produce," *90.1 FM WABE*, Sep. 2017.

[107] M. Flanagan, D. C. Howe, and H. Nissenbaum, "Embodying Values in Technology: Theory and Practice," in *Information Technology and Moral Philosophy*, J. van den Hoven and J. Weckert, Eds., Cambridge: Cambridge University Press, 2001, pp. 322–353, ISBN: 978-0-511-49872-5 978-0-521-85549-5 978-0-521-67161-3.

[108] S. Costanza-Chock, "Design Justice: Towards an Intersectional Feminist Framework for Design Theory and Practice," *Proceedings of the Design Research Society 2018*, 2018.

[109] L. Alcoff, "The Problem of Speaking for Others," *Cultural Critique*, no. 20, p. 5, 1991.

[110] G. B. Rush and R. S. Denisoff, *Social and political movements*. New York: Appleton-Century-Crofts, 1971, ISBN: 978-0-390-76519-2.

[111] J. S. Baek, S. Kim, Y. Pahk, and E. Manzini, "A sociotechnical framework for the design of collaborative services," *Design Studies*, vol. 55, pp. 54–78, 2018.

[112] A. Acquisti and R. Gross, "Imagined Communities: Awareness, Information Sharing, and Privacy on the Facebook," in *Privacy Enhancing Technologies*, G. Danezis and P. Golle, Eds., Berlin, Heidelberg: Springer Berlin Heidelberg, 2006, pp. 36–58, ISBN: 978-3-540-68793-1.

[113] S. G. Harding, *The science question in feminism*. Ithaca: Cornell University Press, 1986, ISBN: 978-0-8014-9363-8 978-0-8014-1880-8.

[114] T. Erickson and W. A. Kellogg, "Social translucence: An approach to designing systems that support social processes," *ACM Transactions on Computer-Human Interaction (TOCHI)*, vol. 7, no. 1, pp. 59–83, Mar. 2000.

[115] D.-H. Shin, "The effects of trust, security and privacy in social networking: A security-based approach to understand the pattern of adoption," *Interacting with Computers*, vol. 22, no. 5, pp. 428–438, Sep. 2010.

[116] L. Palen and P. Dourish, "Unpacking "privacy" for a networked world," in *Proceedings of the conference on Human factors in computing systems - CHI '03*, Ft. Lauderdale, Florida, USA: ACM Press, 2003, p. 129, ISBN: 978-1-58113-630-2.

[117] P. Dourish and K. Anderson, "Collective Information Practice: Exploring Privacy and Security as Social and Cultural Phenomena," *Human-Computer Interaction*, vol. 21, no. 3, pp. 319–342, Sep. 2006.

[118] T. Hirsch, "TXTmob: Text messaging for protest swarms," in *Conference on Human Factors in Computing Systems (CHI) 2005*, ACM Press, 2005, pp. 1455–1458.

[119] V. Wulf, K. Misaki, M. Atam, D. Randall, and M. Rohde, "'On the ground' in Sidi Bouzid: Investigating social media use during the tunisian revolution," in *Proceedings of the 2013 conference on Computer supported cooperative work - CSCW '13*, San Antonio, Texas, USA: ACM Press, 2013, p. 1409, ISBN: 978-1-4503-1331-5.

[120] d. boyd, "Why Youth (Heart) Social Network Sites: The Role of Networked Publics in Teenage Social Life," in *Youth, Identity, and Digital Media*, ser. MacArthur Foundation Series on Digital Learning, D. Buckingham, Ed., Cambridge, MA: MIT Press, 2007.

[121] P. McLaren, *Che Guevara, Paulo Freire, and the pedagogy of revolution*, ser. Culture and education series. Lanham, Md: Rowman & Littlefield Publishers, 2000, ISBN: 978-0-8476-9532-4 978-0-8476-9533-1.

[122] C. A. Le Dantec, E. S. Poole, and S. P. Wyche, "Values as lived experience: Evolving value sensitive design in support of value discovery," in *Proceedings of the 27th international conference on Human factors in computing systems - CHI 09*, Boston, MA, USA: ACM Press, 2009, p. 1141, ISBN: 978-1-60558-246-7.

[123] H. Watkins and C. L. McInnis, *Brother Hollis: the sankofa of a movement man*, First. Sankofa Publishing, Jul. 2016, ISBN: 978-0-9971981-0-2.

[124] D. R. Thomas, "A General Inductive Approach for Analyzing Qualitative Evaluation Data," *American Journal of Evaluation*, vol. 27, no. 2, pp. 237–246, Jun. 2006.

[125] R. H. Turner and L. M. Killian, *Collective behavior*, 2. ed. Englewood Cliffs/N.J: Prentice-Hall, 1972, OCLC: 377188, ISBN: 978-0-13-140657-5.

[126] R. Stoecker, *Defending community: the struggle for alternative redevelopment in Cedar-Riverside*, ser. Conflicts in urban and regional development. Philadelphia: Temple University Press, 1994, ISBN: 978-1-56639-127-6 978-1-56639-128-3.

[127] K. Crenshaw, "Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics," *The University of Chicago Legal Forum*, vol. 140, pp. 139–167, 1989.

[128] P. S. Foner, Ed., *The Black Panthers speak*, 1st Da Capo Press ed. New York: Da Capo Press, 1995, ISBN: 978-0-306-80627-8.

[129] M. Omi and H. Winant, *Racial formation in the United States*, Third edition. New York: Routledge/Taylor & Francis Group, 2015, ISBN: 978-0-415-52098-0 978-0-415-52031-7.

[130] R. S. Garcia, S. Markle, F. Nunn, E. Wright, and S. Guillod, "Peoples Movement Assembly Organizing Handbook," Tech. Rep., 2016.

[131] C. Sirianni, "Neighborhood Planning as Collaborative Democratic Design: The Case of Seattle," *Journal of the American Planning Association*, vol. 73, no. 4, pp. 373–387, Dec. 2007.

[132] S. Markle, F. Nunn, E. Wright, R. Solis, and S. Guilloud, *People's Movement Assembly*, 2016.

[133] A. Simonton, "Out of Struggle: Strengthening and Expanding Movement Journalism in the U.S. South," Project South, Tech. Rep., 2017.

[134] P. Bhatt, P. Sreenivasan, A. Rivera, D. Yoon, K. Caron, and A. Shahshahani, "Inside Atlanta's Immigrant Cages: A Report on the Conditions of the Atlanta City Detention Center," Project South & Georgia Detention Watch, Tech. Rep., Aug. 2018.

[135] N. Klein, *The shock doctrine: the rise of disaster capitalism*. 2008, OCLC: 861522268, ISBN: 978-1-4299-1948-7 978-0-14-198086-7.

[136] ——, *The battle for paradise: Puerto Rico takes on the disaster capitalists*. Chicago, Illinois: Haymarket Books, 2018, ISBN: 978-1-60846-357-2.

[137] C. M. de Onís, "Energy Colonialism Powers the Ongoing Unnatural Disaster in Puerto Rico," *Frontiers in Communication*, vol. 3, p. 2, Jan. 2018.

[138] Jeff Corntassel, Chaw-win-is, and T'lakwadzi, "Indigenous Storytelling, Truth-telling, and Community Approaches to Reconciliation," *ESC: English Studies in Canada*, vol. 35, no. 1, pp. 137–159, 2009.

[139] P. Hill Collins, *Black feminist thought: knowledge, consciousness, and the politics of empowerment*, 2nd ed., ser. Routledge classics. New York: Routledge, 2009, ISBN: 978-0-415-96472-2.

[140] C. Ashcraft, E. Eger, and M. Friend, "Girls in iT: The facts.," National Center for Women & Information Technology, Boulder, CO, Tech. Rep., 2012, p. 79.

[141] O. Keyes, "The Misgendering Machines: Trans/HCI Implications of Automatic Gender Recognition," *Proceedings of the ACM on Human-Computer Interaction*, vol. 2, no. CSCW, pp. 1–22, Nov. 2018.

[142] A. Schlesinger, W. K. Edwards, and R. E. Grinter, "Intersectional HCI: Engaging Identity through Gender, Race, and Class," in *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*, Denver Colorado USA: ACM, May 2017, pp. 5412–5427, ISBN: 978-1-4503-4655-9.

[143] L. Sweeney, "Discrimination in Online Ad Delivery," *Queue*, vol. 11, no. 3, 10:10–10:29, Mar. 2013.

[144] J. Buolamwini and T. Gebru, "Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification," in *Proceedings of the 1st Conference on Fairness, Accountability and Transparency*, S. A. Friedler and C. Wilson, Eds., ser. Proceedings of Machine Learning Research, vol. 81, New York, NY, USA: PMLR, Feb. 2018, pp. 77–91.

[145] S. U. Noble, *Algorithms of oppression: how search engines reinforce racism*. New York: New York University Press, 2018, ISBN: 978-1-4798-4994-9 978-1-4798-3724-3.

[146] C. Fiesler, S. Morrison, and A. S. Bruckman, "An Archive of Their Own: A Case Study of Feminist HCI and Values in Design," in *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*, San Jose California USA: ACM, May 2016, pp. 2574–2585, ISBN: 978-1-4503-3362-7.

[147] L. C. Irani and M. S. Silberman, "Turkopticon: Interrupting worker invisibility in amazon mechanical turk," in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems - CHI '13*, Paris, France: ACM Press, 2013, p. 611, ISBN: 978-1-4503-1899-0.

[148] M. L. King and J. Jackson, *Why we can't wait*. New York: New American Library, 2000, ISBN: 978-0-451-52753-0.

[149] S. Levin, "Is Facebook a publisher? In public it says no, but in court it says yes," *The Guardian*, Jul. 2018.

[150] J. Dorsey, *Testimony of Jack Dorsey (Chief Executive Officer Twitter, Inc.)* Sep. 2018.

[151] J. Dewey, "Progress," *Ethics*, vol. 26, no. 3, p. 311, Apr. 1916.

[152] J. Dinerstein, "Technology and Its Discontents: On the Verge of the Posthuman," *American Quarterly*, vol. 58, no. 3, pp. 569–595, 2006.

[153] A. Brah and A. Phoenix, "Ain't IA Woman? Revisiting Intersectionality," *Journal of International Women's Studies*, vol. 5, 2004.

[154] R. Dyer, *White*. London ; New York: Routledge, 1997, ISBN: 978-0-415-09536-5 978-0-415-09537-2.

[155] W. Evans and S. Rangarajan, "Hidden figures: How Silicon Valley keeps diversity data secret," *Reveal*, Oct. 2017.

[156] A. Hamraie, *Building access: universal design and the politics of disability*. Minneapolis: University of Minnesota Press, 2017, ISBN: 978-1-5179-0163-9 978-1-5179-0164-6.

[157] C. L. Bennett and D. K. Rosner, "The Promise of Empathy: Design, Disability, and Knowing the "Other"," in *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems - CHI '19*, Glasgow, Scotland Uk: ACM Press, 2019, pp. 1–13, ISBN: 978-1-4503-5970-2.

[158] W. J. Orlikowski, "Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations," *Organization Science*, vol. 11, no. 4, pp. 404–428, Aug. 2000.

[159] L. Suchman, "Embodied Practices of Engineering Work," *Mind, Culture, and Activity*, vol. 7, no. 1-2, pp. 4–18, May 2000.

[160] ——, "Located Accountabilities in Technology Production," *Scandinavian J. Inf. Systems*, vol. 14, 2002.

[161] K. M. Barad, *Meeting the universe halfway: quantum physics and the entanglement of matter and meaning*. Durham: Duke University Press, 2007, OCLC: ocm71189745, ISBN: 978-0-8223-3901-4 978-0-8223-3917-5.

[162] R. M. Emerson, R. I. Fretz, and L. L. Shaw, *Writing ethnographic fieldnotes*, 2nd ed, ser. Chicago guides to writing, editing, and publishing. Chicago: The University of Chicago Press, 2011, ISBN: 978-0-226-20683-7.

[163] C. Swann, "Action Research and the Practice of Design," *Design Issues*, vol. 18, no. 1, pp. 49–61, Jan. 2002.

[164] C. B. Weatherford and E. Holmes, *Voice of freedom: Fannie Lou Hamer, spirit of the civil rights movement*, First edition. Somerville, Massachusetts: Candlewick Press, 2015, ISBN: 978-0-7636-6531-9.

[165] T. Tingle, *Walking the Choctaw road*, 1st ed. El Paso, TX: Cinco Puntos Press, 2003, ISBN: 978-0-938317-74-6.

[166] R. J. Scannell, "This Is Not *Minority Report* :: Predictive Policing and Population Racism," in *Captivating Technology: Race, Carceral Technoscience, and Liberatory Imagination in*

*Everyday Life*, R. Benjamin, Ed., Duke University Press, 2019, pp. 107–129, ISBN: 978-1-4780-0449-3.

[167] P. Agre, "Toward a Critical Technical Practice: Lessons Learned in Trying to Reform AI," in *Social Science, Technical Systems, and Cooperative Work: Beyond the Great Divide*, ser. Computers, Cognition and Work, Psychology Press, Sep. 1997.

[168] P. Dourish, J. Finlay, P. Sengers, and P. Wright, "Reflective HCI: Towards a critical technical practice," in *Extended abstracts of the 2004 conference on Human factors and computing systems - CHI '04*, Vienna, Austria: ACM Press, 2004, p. 1727, ISBN: 978-1-58113-703-3.

[169] T. Mathiesen, "The politics of abolition," *Contemporary Crises*, vol. 10, no. 1, pp. 81–94, 1986.

[170] D. E. Roberts, *Killing the black body: race, reproduction, and the meaning of liberty*, 1st ed. New York: Vintage books, 1997, OCLC: 833037209, ISBN: 978-0-679-75869-3.

[171] J. Medina, *The epistemology of resistance: gender and racial oppression, epistemic injustice, and resistant imaginations*, ser. Studies in feminist philosophy. Oxford ; New York: Oxford University Press, 2013, ISBN: 978-0-19-992902-3 978-0-19-992904-7.

[172] K. L. Barrow, *Daring to Dream- Crafting a Harm Free Zone*, Mar. 2020.

[173] J. Lingel, *Digital countercultures and the struggle for community*, ser. The information society series. Cambridge, MA: The MIT Press, 2017, ISBN: 978-0-262-03621-4.

[174] C. O'Neil, *Weapons of math destruction: how big data increases inequality and threatens democracy*, First edition. New York: Crown, 2016, ISBN: 978-0-553-41881-1 978-0-553-41883-5.

[175] C. W. Mills, *The racial contract*, Nachdr. Ithaca, NY: Cornell Univ. Press, 2011, ISBN: 978-0-8014-8463-6 978-0-8014-3454-9.

[176] J. R. Feagin, *Systemic racism: a theory of oppression*. New York: Routledge, 2006, OCLC: 144587232, ISBN: 978-0-203-95699-1 978-1-315-88093-8 978-1-134-72900-5 978-1-134-72907-4 978-1-134-72914-2 978-0-415-95278-1.

[177] K. G. Muhammad, *The condemnation of blackness: race, crime, and the making of modern urban America*. Cambridge, Mass.: Harvard Univ. Press, 2010, ISBN: 978-0-674-06211-5 978-0-674-03597-3.

[178] L. C. Irani and M. S. Silberman, "Stories We Tell About Labor: Turkopticon and the Trouble with "Design"," in *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*, San Jose California USA: ACM, May 2016, pp. 4573–4586, ISBN: 978-1-4503-3362-7.